

COURSE OF STUDY

TEACHERS' EDITION

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COURSE OF STUDY

— FOR THE —

COMMON SCHOOLS

— OF —

ILLINOIS.

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❖❖❖ REVISED IN 1897. ❖❖❖

—
*Revised by a Committee Chosen by the County Super-
intendents' Section of the State Teachers'
Association.*

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C. M. PARKER, PUBLISHER,
TAYLORVILLE, ILL.
1897.

TO THE COUNTY SUPERINTENDENTS OF ILLINOIS :

As a special favor to the schools, both to teachers and pupils, your committee would respectfully call your attention to the duty of maintaining the Course of Study in its entirety as arranged. Small portions of the Course printed separately and hidden between pages of advertising can never accomplish the purposes intended by the County Superintendents' Section of the State Teachers' Association when it appointed its committee to revise and improve the full Course.

Teachers and pupils need the complete work in order to see the relations of all its parts. The directions given for one year are often carried over or referred to in the next, and not being repeated, are lost in all mutilated editions. As guardians of the interests of the children, may we not confidently rely upon you to endorse nothing in your respective counties except the full and complete Course of Study arranged by the committee working under your direction.

S. M. INGLIS, State Supt. of Public Instruction.

GEO. R. SHAWHAN, Co. Supt. of Champaign County.

W. R. HATFIELD, Co. Supt. of Pike County.

JOSEPH M. PIPER, Co. Supt. of Ogle County.

JAMES KIRK, Professor of Pedagogy, Southern Normal.

JOHN W. COOK, President State Normal University.

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HISTORICAL.

The closer supervision of the schools which led to the development of the present Course of Study had its beginning in Macon county about 1879 or 1880, with John Trainer, County Superintendent of Schools in that county. His work soon spread into Piatt and Champaign counties, and grew into what served for a time as a course of study for those counties. As time passed and the idea developed, new courses, embodying special features, appeared in various counties of the State.

At a meeting of the Central Illinois Teachers' Association at Jacksonville in March, 1889, the friends of the plan discussed the advantages of a State Course, and at their solicitation, Hon. Richard Edwards, Superintendent of Public Instruction, issued a call to County Superintendents and other leading educators of the State to meet in Springfield, April 10, 1889, to discuss the subject. As a result of this meeting a committee consisting of George R. Shawhan, County Superintendent of Champaign county; J. A. Miller, County Superintendent of McLean county; George W. Oldfather, County Superintendent of Knox county; Geo. I. Talbot, County Superintendent of DeKalb county; and J. D. Benedict, County Superintendent of Vermilion county, was appointed to compile a course of study for the State, consisting of eight years' work, eight months to each year.

This course was completed and published in time for the opening of the schools in September of that year. One edition was issued by the State Department of Education. It was used in most of the counties of Illinois, also in some counties in Pennsylvania, the Dakotas, Kansas, Nebraska, Iowa, and even as far west as Oregon. It continued in use until 1894.

Joseph H. Freeman, President of the State Teachers' Association, in 1893, in his inaugural address urged the revision and improvement of the State Course of Study. In accordance with his suggestions the following committee was appointed by that body on December 28, 1893, to do that work: Hon. Henry Raab, Superintendent Public Instruction; George R. Shawhan, County Superintendent of Champaign county; Henry Foster, County Superintendent of Livingston county; Joseph M. Piper, County Superintendent of Ogle county, and A. C. Butler, Principal of Taylorville Township High School. This committee completed its work in time for most of the annual institutes of 1894, making the course conform to the new law relating to alcohol and narcotics. A two years' Higher Course was also added at this time.

At the December meeting, 1895, the County Superintendents' Section of the State Teachers' Association appointed a standing committee on the revision and improvement of the State Course of Study. It consisted of the following members: Hon. S. M. Inglis, Superintendent Public Instruction and George R. Shawhan, County Superintendent of Champaign county chosen for three years; Prof. James Kirk, of the Southern Normal at Carbondale and J. M. Piper, County Superintendent of Ogle county for two years; and E. W. Cavins of State Normal University at Normal, and W. R. Hatfield, County Superintendent of Pike county, for one year. During the following year this committee perfected the plans and collected the material for several new features. At the December meeting, 1896, the County Superintendents' Section selected John W. Cook, President of the State Normal University at Normal, to fill the vacancy caused by the expiration of the term of Mr. Cavins, and W. R. Hatfield to succeed himself; each elected for a term of three years. The following Course of Study is the result of the labors of this Committee.

PREFACE.

To the County Superintendents of Illinois:

The standing committee appointed at your December meeting in 1895, and also, in December, 1896, to revise the Course of Study, herewith lays before you the result of its labors.

It has endeavored to preserve the work of former committees and to make such improvements as time and experience have shown to be necessary and feasible. The general plan of the Course has been retained.

The schools of the State are indebted to John W. Cook, President of the State Normal University, and Prof. David Felmley, of the same institution, for the entire course in Number and Arithmetic; to Professor Henry McCormick of the same institution for the re-adjustment and enlargement of the course in Geography; to Professors James Kirk and George W. Smith, of the Southern Normal, for the work in advanced United States History; to C. M. Parker, Editor of *The School News*, for the new work in third and fourth years' Language, (except the stories for additional work, which were suggested by Mrs. McMurry, of the State Normal University), for the extension of the work in Spelling from fifth to eighth year inclusive, and the selection and arrangement of the course in Morals and Manners; to Joseph M. Piper, County Superintendent of Ogle county, for the course in Physiology and Narcotics; to Professor E. W. Cavins, of Normal, for the course in Vertical Writing; to Professor T. A. Clark, of the University of Illinois, for the Composition; to Professor E. J. Lake, of the same institution for the work in Drawing; to M. W. Moore, teacher of Vocal Music in Urbana Schools, for the course in Music; to Professor Frank H. McMurry, now of the School of Pedagogy, Buffalo, New York, for the Observation Work; to W. R. Hatfield, County Superintendent of Pike county, for re-writing the Elementary History; and to Professor W. B. Davis, Superintendent of Pittsfield Schools, for the tabulated arrangement of studies for the three years' Higher Course and the four years' High School Course; and finally to the untiring efforts of George R. Shawhan, County Superintendent of Champaign county, (who has been a member of the committee on State Course of Study ever since the first edition of 1889), for his careful supervision of the work, especially in arranging and editing copy.

Believing that the American Common School is one of the most potent factors of our civilization for promoting the good of the individual, for maintaining "a government by the people and for the people," and for building up and sustaining a pure and wholesome society, your committee, submits this revision of the Course of Study as an aid to the great work the schools are doing to prepare the boys and girls for the labors of life, for good citizenship, and for being good men and women.

S. M. INGLIS, State Supt. of Pub. Instruction.

GEO. R. SHAWHAN, Co. Supt. of Champaign County.

W. R. HATFIELD, Co. Supt. of Pike County.

JOSEPH M. PIPER, Co. Supt. of Ogle County.

JAMES KIRK, Professor of Pedagogy Southern Normal.

JOHN W. COOK, President State Normal University.





INTRODUCTION.

THIS Course of Study is intended for the use of teacher and pupils, giving them a definite idea of the work required in each branch and of the best methods for doing it. It should be studied in the Annual Institutes, and in local teachers' meetings during the year. A special investigation of school work with reference to the adjustment and arrangement of its various parts, together with the best means and plans for doing it, will prove to be professional study of the highest order. The teacher who knows the most of these matters and who most skillfully adapts them to his daily work will prove to be the most successful in his calling.

Hence the aim of this work is:

First.—To furnish, as a basis for work, to superintendents, teachers, and directors, an outline of the various branches required by law to be taught in the schools of the State, arranged in the several grades, in accordance with established and approved methods.

Second.—To advance the pupil, step by step, through his school life, giving him credit for work done, and thereby lessening the evil effects of a too frequent change of teachers.

Third.—To unify the work in the common schools of the county by furnishing the basis for a closer and more effective direction and supervision, and for comparing by means of examinations, or written reviews, the results in the different schools.

Fourth.—To enable directors and parents to know better what the common schools are accomplishing for their children and to co-operate with teachers in the work.

THE PLAN.

The eight grades of work below the High School are divided into three divisions, viz., Primary, Intermediate, and Grammar grades, and are provided for as follows:

Primary Grades.—The Primary Grades include the first and second years, and present the work of the chart, first, and second readers, also oral instruction in language and number and the simple drawing found in charts and readers.

Intermediate Grades.—These include the third, fourth, fifth, and sixth years, and present work in the elements of the various subjects of study. Elementary texts are taken up in language and grammar, arith-

metic, geography, history, and physiology and narcotics, which serve as an introduction to each of these branches and to acquaint the child with a part of the technical language belonging to each.

Grammar Grades.—These include the seventh and eighth years and complete the advanced or common school texts in arithmetic, grammar, geography, history, physiology and narcotics.

General Exercises.—Spelling, writing, music, drawing, and morals and manners, are to be included from the chart through the entire course. Observation Work in the natural sciences,—zoology, botany, and physics—has been prepared for all grades above the primary.

Higher Course.—To aid pupils who wish to continue their studies beyond the common branches, and to provide a more extended course for the smaller graded schools, a higher course consisting of two years' work which can be alternated, has been prepared. A third year, for schools whose teaching force and attendance will justify its use, has been added. This course includes High School texts in science, mathematics, general history, bookkeeping, physiology, etc.

THE SCHOOL LIBRARY.

In order to do the best work with this Course of Study, libraries for reading and reference are essential. Unless pupils have the power of easy and rapid reading, progress is necessarily slow. When the pupil enters the grammar grades he should be able to read and understand the language used in the common text-books. To attain this power he must read thoughtfully many books while in the primary and intermediate grades. To serve as a guide to teachers on this point, lists of suitable books are given throughout the course on reading. Books of reference are of little value to a poor reader, but to a good one all knowledge is accessible. For these reasons a library selected to give pleasure to the child as well as profit should be in every school.

INDIVIDUALITY OF THE TEACHER.

In preparing the outline, great care has been taken not to encroach upon the individuality of the teacher, for that is invaluable. Except in the most primary work, the course states *what* should be taught; to the individuality of the teacher is left the *how* to teach the subject. He should remember that he is at liberty to use any or all methods at his command. The only requirement is that *he do the work well*.

ALTERNATION OF WORK.

Country and village schools have practiced combining classes, to reduce the number of recitations, ever since they have been in existence. It is a necessity and must be done, or a large part of the common school curriculum must be abandoned. Alternation is the systematic and regular union of two grades of pupils on consecutive years of work, both grades doing the work of one year in one class, while the other year's work is entirely omitted. The next year, the work omitted is taken up and the first year's work dropped. By this plan each pupil does all the work of the course, but not in the same order, while the number of classes is diminished.





Alternation in Seventh and Eighth Years.—To illustrate, consider the seventh and eighth years' work, as given below, with sixteen recitations, if the Course is to be taken in order:

SEVENTH YEAR.

Reading or Literature.
Spelling. (Not same as Eighth Year.)
Arithmetic, (Business.)
Grammar, (Etymology.)
Composition.
Geography, (Mathematical, North America, and South America.)
History, (To the Administrations.)
Physiology, (Elementary.)

EIGHTH YEAR.

Reading or Literature.
Spelling. (Not repetition of Seventh Year.)
Arithmetic, (Mensuration.)
Grammar, (Syntax and Analysis.)
Composition.
Geography, (Europe, Asia and Africa.)
History, (Constitutional period to present time.)
Civics.

The work in each year is arranged so as to be entirely independent of the other year, and can be taken first or second as the circumstances of each pupil require. The children are supposed to be from twelve to fourteen or fifteen years old. When a pupil reaches this part of the course he will take that year to be taught next, going into the class already organized. Thus in 1897-8, pupils reaching the grammar grades should take the eighth year's work with those who have already done the seventh year. In 1898-9 all pupils, who have not already done so, should take the seventh year, while those who have taken both can either pass on into the Higher Course, or review the first year of the grammar grades again, as is deemed best. The number of recitations is reduced one half.

Alternation in Higher Course.—The two years of the Higher Course may be alternated in the same way. Let all who have completed the common course take in 1897-8 the first year of the Higher, and in 1898-9 the second, together with the new pupils reaching this course in that year. Algebra can not be alternated. Two classes are necessary. Again the number of recitations is reduced about one half.

Alternation in Intermediate Grades.—In the intermediate grades Alternation can be used partially. The fifth and sixth years can be alternated easily in reading, and spelling, while in the third and fourth years the language has been prepared with this in view.

Alternation in Observation Work.—In Observation Work, all pupils above the third grade can take zoology in 1897-8, botany in 1898-9, and physics in 1899-1900.

Alternation in Penmanship and Drawing.—In penmanship all classes should practice at the same time, and if there be two grades, instruction can be given one division while the other writes or draws, and vice versa. Drawing may be managed in the same way, though drawing and penmanship may alternate day by day with profit to both branches.

Alternation in Graded Schools.—The smaller graded schools of two to six rooms will find this system of alternation of great benefit in giving them more time by reducing the number of recitations. A careful study and practice of alternation for eleven years has demonstrated its usefulness and feasibility.

COUNTIES WITH SHORT TERMS OF SCHOOLS.

Counties in which the average term of school for the year is but five or six months, can easily adapt this Course to their needs by dividing it into nine or ten years' work of six or seven months each. Let the County Superintendent in his circular, or at the Annual Institute, say to the teachers:

This year take the first six months' work in each year of the Course. Next year each class will begin where it leaves off this year, and take the last two months' work and the first four months of the succeeding year; the third year these classes will take the last four months of the year they are working on, and the first two of the following year, and so on through the entire Course. Each child may in this way take the whole course of study regularly, though he will be a longer time at the work. But this definite, regular work is recommended in all cases. It is exactly what the schools need.

EXAMINATIONS OR WRITTEN REVIEWS.

During the past few years much has been said on the subject of examinations, some commending and others condemning them. It should be borne in mind that the examinations or written reviews here referred to are very different from the "examinations for promotion," that have been so much abused in some city schools. Language has two forms, oral and written, and all will agree that in both forms there should be training. Judging by the past, in many rural schools, there would be but little or no attention given to the forms of written language, if it were not for written reviews sent out from the County Superintendent's office.

It should also be remembered that the supervision of rural schools differs from that of city schools in that the County Superintendent can visit each school but once or twice during an entire year, and then only for a short period of time. The written reviews when sent out from the Superintendent's office monthly, afford an opportunity not only for testing the work, but of keeping in touch with his schools and keeping his schools in touch with him. The questions should be fair tests, but not difficult or long, and if carefully prepared they not only serve as tests but suggest good methods of teaching, which is one of their most valuable features. In this way the County Superintendent has an opportunity not only to touch every teacher of his county once a month, but every pupil in the schools. What a power for good if properly used! But, like any other good thing, these examinations may be abused. Dr. Klemm says: "*It is the abuse and not the proper use of examinations that should be condemned.*"

To enforce the use of the Course of Study in rural schools, where personal supervision is so imperfect as stated above, the work has been divided into months, and a system of monthly, central, and final examinations is recommended. That these examinations be not abused it will be well to explain their proper use at the Annual Institutes. Teachers having Morgan's "Studies in Pedagogy" should read the chapter on "Examinations," pages 241 to 250.

"Examinations wisely conducted are a process of teaching as well as of testing."—*George A. Littlefield.*

"Examinations in our schools cannot cease. They are a component part of the school. They should be reasonable. When all are so, the better part of the profession will have no cause to condemn."—*Aaron Gove.*

"What an eye-opener a searching written examination would be in schools where teachers talk and explain much and the pupils recite very little; where the instruction is given largely in the form of running talks without a halt to test results."—*Dr. E. E. White.*

"Like every other educational device examinations are good or evil according as they are used judiciously or without discretion."—*Morgan's Studies in Pedagogy.*





MONTHLY, CENTRAL, AND FINAL EXAMINATIONS.

The details of these examinations vary somewhat in different counties, but the plan in general is about as follows:

Monthly Examination.—The monthly examination will occur on the last Friday of each month, or on such other date as the County Superintendent may name. Questions for all grades, confined to the limits in the Course of Study for the given month, will be sent by the County Superintendent to teachers before the date for holding the examination.

Central Examination.—The central examination is held at the center schoolhouse of each congressional township, or of other groups of schools agreed upon. It should be as near the close of the school year as possible and yet secure the attendance of the older pupils. The plan of conducting central examinations varies in different counties. Usually all pupils of the grammar grades (seventh and eighth years) who have studied all the branches named in the Course for that year, and those in the higher course are admitted. The questions should be furnished by the County Superintendent, and should cover in a general way the work of the year up to the date of the examination. They should be fair tests. Puzzling, difficult questions should be avoided, and great care should be taken not to make the work too long. The paper for these examinations should be uniform, and in some counties it is furnished from the County Superintendent's office.

In some counties these examinations are conducted by the County Superintendent in person, the examinations in different townships being held on different days. In other counties all the centrals are held on the same day, and are conducted by the teachers of the township, one of whom is appointed chairman for the day either by the County Superintendent or elected by those present. The chairman supervises the work and decides all questions that may arise. The papers are graded by the teachers in attendance, and with the tabulated results the work is sent to the County Superintendent. A certificate is issued to each pupil showing his grades in each branch, also his rank in class. The pupil having the highest average being rank 1, the next highest rank 2, etc. All pupils coming up to a certain standard previously announced by the County Superintendent, are admitted to the final examination held at the county seat, or other places designated by the County Superintendent.

It will be observed that the central examination brings the pupils and teachers of the township together, affording them an opportunity to become acquainted and compare work. Often parents accompany their children to these examinations and remain through the entire day with unabated interest.

At least one director from each school should attend the central examination of the township. He can be of great service as chairman, or in helping about the work of the day, in seeing that the needed supplies are on hand, etc. But above all he can have an opportunity to examine the work of all the schools of the township, and inform himself of its relative merits. He will become acquainted with the teachers, and knowing something of their ability to get work done properly, will be able to judge more intelligently when the time comes for re-employing them.

Final Examination.—The final examination is held at the county seat, or other places designated by the County Superintendent, within a few weeks after the centrals. As already stated it is made up of pupils who have come up to the required standard in the centrals. The questions should be furnished by the County Superintendent, and like those for the centrals should cover in a general way the work of the entire year, but care should be taken not to make them too long.

In the plan of alternation provided for in this Course, the pupils attending the final examination should be given a certificate showing which year's work has been completed (seventh or eighth), and when the other year has been completed as shown by an examination at a future final examination a more elaborate certificate may be given, or a common school diploma issued, as the County Superintendent chooses; but a diploma should not be granted until the work of the two years has been finished. In many counties these certificates or diplomas will admit pupils to the High Schools without further examination, and the work should be brought up to such a standard that this will be done in every county. The common school should reach up to the High School without any missing round in the educational ladder.

As most of the teachers and pupils attending the final will have to remain at the county seat until the next day, an opportunity is furnished for a good literary entertainment, the program being filled by pupils from various parts of the county. The proceeds may go toward establishing a County Library to be kept in the County Superintendent's office, and to circulate in all the schools of the county.

DIRECTIONS FOR EXAMINATIONS.

1. Teachers and pupils should see that everything is in readiness for the examination or review before the day arrives. Good paper, pens, and ink should be furnished by the school board and a supply kept on hand. In the central examinations the school at which the examination is held should furnish ink, while each pupil provides his own pens, pencils, etc.

2. The examination should begin promptly in the morning of the day appointed. The questions may be placed on the board, or dictated as required. Some of the pupils who write well may assist the teacher by writing questions on the board.

3. The pupils should write on both sides of the paper when necessary to complete a subject.

4. The answers should be numbered to correspond with the questions, in the Roman notation, in the center of the page above the paragraphs.

5. Every one should endeavor to do neat work, to use capitals and periods properly, and to spell well. Good language is evidence of scholarship.

6. These examinations or reviews to be fair tests of the progress of the pupils and to be valuable to teachers and parents, must be fairly and honestly conducted. No aid whatever should be given. No question should be answered and no suggestions made that will in any way hint at the information sought in the examination. Do not let your tender-heartedness, nor your desire for high marks for your pupils, betray you into





wronging them, or their parents, by telling them they know that which they do not know, and raising them above the plane to which they really belong. Consider the moral effects of such a course on yourself and your pupils. *Do not deceive by false grades.*

7. The teacher, without marring the paper, will place above each answer, near the Roman character, its grade (on a scale of 100 for the entire paper), and at the beginning of each paper write the sum of these grades. Mark *closely*, considering not how much information has been given in the answer, but whether it is the exact information called for. After grading, return the monthly examination papers to the pupils in class, and require them to note their own mistakes. Permit no change. After inspection, papers should be collected and bound in covers, and a permanent record made of the grade of each pupil. The County Superintendent in his visits will like to see these papers, the permanent record of grades, as well as the daily register. If kept in good condition they add greatly to the reputation of the school.

8. The papers from the central and final examinations should be sent to the County Superintendent's office. In these examinations every teacher grading a paper should write his own name upon it as a certificate of good faith and of honesty of purpose.

RECORDS.

The record of all the examinations—monthly, central, and final—should be kept by the teacher in each school, of its pupils. Low grades should stimulate to more earnest effort, while high grades, honestly earned, or a fine record at central and final are a source of satisfaction and pride to all in the district. Every school ought to remember its good scholars. The records of the centrals and finals should be kept in well bound books by the County Superintendent. As the years go by they are useful in many ways. They honor the diligent and inspire the sluggish.

PATRONS' DAY.

Every school should have a day or half a day set apart for the exhibition to parents and visitors of its best work. The people of the district furnish the money to support the school and they have a right to see and to know what the results are. Historical papers, analyses of sentences, maps, arithmetical solutions, examination papers of all kinds, drawings, specimens of plants and animals, home-made apparatus to illustrate physics, lists of spelling, of diacritical markings, all of these and more in an infinite variety, can be ranged on the walls, on the blackboard, on the desks, and displayed for the inspection of visitors. Good work done during the year can be preserved for this day. Any teacher who can in this practical and real way show his patrons the honest results of his labors can not fail to secure their esteem and respect. The last day of the school is an appropriate time for such an exhibition of school work.



OUTLINE OF THE COURSE.

PRIMARY DIVISION.	First Year....	Reading. Spelling. Language. Number. Writing. Physiology. General Exercises.....	{ Music. Drawing. Morals and Manners
		Reading. Spelling. Language. Number. Writing. Physiology. General Exercises.....	{ Music. Drawing. Morals and Manners.
	Third Year...	Reading. Spelling. Language. Arithmetic. Physiology and Hygiene. General Exercises.....	{ Music. Drawing. Morals and Manners.
		Reading. Spelling. Language. Arithmetic. Writing. Physiology and Hygiene. Geography. General Exercises.....	{ Music. Drawing. Morals and Manners.
INTERMEDIATE DIVISION.	Fifth Year...	Reading. Spelling. Grammar. Arithmetic. Writing. Science..... Physiology. Geography. General Exercises.....	{ Zoology 1897-8. Botany 1898-9. Physics 1899-1900. Music. Drawing. Morals and Manners.
		Reading. Spelling. Grammar. Arithmetic. Writing. Science..... Physiology. History. General Exercises.....	{ Zoology 1897-8. Botany 1898-9. Physics 1899-1900. Music. Drawing. Morals and Manners.
	Seventh Year	Reading. Orthography. Grammar. Arithmetic. Writing. Science..... Physiology. History. General Exercises.....	{ Zoology 1897-8. Botany 1898-9. Physics 1899-1900. Music. Drawing. Morals and Manners.
		Reading. Orthography. Grammar. Arithmetic. Writing. Science..... History. Civics. General Exercises.....	{ Zoology 1897-8. Botany 1898-9. Physics 1899-1900. Music. Drawing. Morals and Manners.
ADVANCED DIVISION.	Eighth Year.	Reading. Orthography. Grammar. Arithmetic. Writing. Science..... History. Civics. General Exercises.....	{ Zoology 1897-8. Botany 1898-9. Physics 1899-1900. Music. Drawing. Morals and Manners.
		Reading. Orthography. Grammar. Arithmetic. Writing. Science..... History. Civics. General Exercises.....	{ Zoology 1897-8. Botany 1898-9. Physics 1899-1900. Music. Drawing. Morals and Manners.

Higher Course.—A higher course, consisting of two years' work, (ninth and tenth years), to follow the common school course, is outlined in detail in the back part of this Course, (pages 126 to 137).

High School Courses.—Two suggestive high school courses are given in tabulated form, one for three years, and the other for four years, (pages 139 to 142).

COURSE OF STUDY

THE CURRICULUM

INTRODUCTION

The purpose of this course is to provide a comprehensive overview of the field of study. The course is designed to be self-paced, allowing students to progress at their own rate. The curriculum is divided into several sections, each covering a different aspect of the subject. The first section, "Foundations," introduces the basic concepts and terminology. The second section, "History," explores the development of the field over time. The third section, "Theory," discusses the underlying principles and models. The fourth section, "Practice," focuses on the application of theory to real-world situations. The fifth section, "Research," examines the methods and findings of current research. The sixth section, "Future," looks at emerging trends and challenges. The course is intended for students who are new to the field and want to gain a solid understanding of the basics. It is also suitable for students who want to refresh their knowledge or explore a new area of interest. The course is available in both print and digital formats, making it accessible to a wide range of learners. The digital format includes interactive features, such as quizzes and simulations, to enhance the learning experience. The print format is available as a hardcover book or a loose-leaf binder. The course is taught by a team of experienced instructors who are experts in their respective fields. They provide support and guidance throughout the course, ensuring that students have a successful learning experience. The course is open to students of all ages and backgrounds. It is a flexible and engaging program that provides a high-quality education in a convenient format. The course is a valuable resource for anyone interested in the field of study. It is a comprehensive and up-to-date overview of the field, covering all the essential topics. The course is a great way to learn about the field and gain the skills and knowledge needed to succeed in it. The course is a must-read for anyone interested in the field of study. It is a comprehensive and up-to-date overview of the field, covering all the essential topics. The course is a great way to learn about the field and gain the skills and knowledge needed to succeed in it. The course is a must-read for anyone interested in the field of study.

THE HISTORY OF THE

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FROM THE FIRST SETTLEMENT TO THE PRESENT

BY JAMES H. HARRISON, M.D., LL.D., F.R.S.

OF THE UNIVERSITY OF CHICAGO

AND OF THE UNIVERSITY OF TORONTO

IN TWO VOLUMES

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COURSE OF STUDY.

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FIRST YEAR.

TEXT-BOOK.—First Reader.

READING.—First reader or readers.

SPELLING.—Words from readers, and other familiar words.

LANGUAGE.—In connection with reading.

NUMBER.—From 1 to 10 with combinations.

WRITING.—In connection with reading.

GENERAL EXERCISES.—Music, Drawing, Morals and Manners.

READING.

Books and Apparatus.—Tablet and lead-pencil or slate, sponge, pencil, rule, and one or more first readers. Pencil should be kept long and well sharpened.

Supplementary Reading.—Since the amount of material in one first reader is not sufficient to employ and interest the child profitably a whole year, a few books suitable for class work and individual reading are here suggested. Perhaps but few schools will have all of them, but every class and pupil should read one or more. These beautiful books afford children both pleasure and profit, and tend to prevent that dullness of mind and lack of interest arising from the enforced idleness so common in school. They are arranged in the order of their difficulty, the easier first. *Cyr's Primer*, (Ginn & Co.); *The Werner Primer*, (The Werner School Book Co.); *Stickney's First Reader*, (Ginn & Co.); *Our Little Book for Little Folks*, (American Book Co.); *Nature's By Ways*, (The Morse Co.); *Cyr's First Reader*, (Ginn & Co.); *Fairy Tales and Fables*, (The Morse Co.); *Fables and Rhymes for Beginners*, (Ginn & Co.); *Hodskin's Little People's Reader*, (Ginn & Co.).

Objects.—1. To recognize at sight the written and printed forms of the words found in the child's spoken vocabulary, and to pronounce them readily as wholes.

2. To write single words and combine them in easy sentences.

3. To separate them into their elementary sounds, and to combine sounds into words. To learn the names of the characters representing these sounds.

4. To train in the proper use of his vocabulary.

Methods.—Teach by the word, sentence, and phonic methods.

Preparatory.—The first thing to be done is to get the child to talk. When he is free from the embarrassment of his new surroundings, fix his attention upon some object or picture of the object and have the crayon say the word. The words put upon the board should be placed there by the teacher in script letters as nearly perfect as possible. Train pupils to pronounce at sight, both the written and the printed forms. Allow no printing by the children. Teach, in this way, two or three common names. When they are well learned, the articles *a* and *the* should be prefixed; as, *a boy, a cat, a dog; the boy, the cat, the dog*. The pupils should be taught to pronounce these groups as one word, pronouncing "a-boy" as if it were a word of two syllables like "about." Next teach several adjectives, as, *a black dog, a white cat, etc.* In the same manner, teach a verb, as *runs*. When the above words are thoroughly learned, a few short sentences should be taught, as, *the boy runs, the dog runs, the white cat runs, the black dog runs, etc.* Arrange these words in as many different sentences as possible. Continue in this way, until fifty or a hundred words have been taught. This will take from two to three months. The words should be taken from the reader or chart that the pupils are to use.

Encourage the child to be natural—to talk, not to do some new, strange thing. Train the pupil to see the entire short sentence and then to speak it. Never allow the pupil to drawl. Correct faulty reading not so much by mere imitation, as by leading the pupil to get a clear mental picture of what he reads, and to express his thoughts in an easy, conversational manner.

Seat Work.—To aid the pupil in naming words at sight, use sentence builders, cards containing the words written or printed on them. Let these be put together so as to form the easy sentences of the chart or lessons. As soon as a word or two can be recognized at sight, the pupil should be required to build the sentences, using separate words on bits of cardboard. Continue building sentences until the reader is taken up. The teacher should use his own judgment as to the amount of seat work and its nature. Every pupil should be kept busy at some profitable employment. Playing with sticks, marking with a pencil, or doing anything else with no definite aim in view, should not be permitted.

Reader.—As soon as the required number of words has been taught in this way, and read by the pupils from the chart or words made by the teacher on the board, the child should take the book. If he has been properly taught from the chart and board, he is now able to read several pages of the reader at sight. Do not allow pupils to read a lesson from the reader until they have mastered every word in that lesson by means of blackboard drill. Keep readers closed during blackboard drill. If necessary, take whole time of recitation to teach new words. It is well to complete the first half of two first readers before completing any entire first reader.

Phonics.—After a few days at school, begin to train the child to distinguish sounds and to observe that words are usually made up of two or more sounds. This can be done by pronouncing the word slowly and more slowly—that is, prolonging each sound until the word is separated into its





elements. Train the child to do this until he can readily find and make the sounds in a known word. Do not hurry. Practice a little each day. Train the child to recognize and to speak the word when the teacher gives the sounds, and to give the sounds when the word is pronounced. As the pupil advances and learns that a certain letter represents a certain sound, then tell him the name of the letter.

Spelling.—Spell the words of the reader chiefly by writing them, but do not neglect oral spelling.

LANGUAGE.

All language work for the first two years should be done in connection with the reading.

Encourage the Children to Talk.—Lead them to make grammatical sentences about familiar objects. Correct common errors in their speech. Tell them good stories in which real, human actions are described, and require them to repeat them to you, first in answer to questions upon the incidents, and later in comprehensive form.

Teach the use of capitals in the following cases: Beginning of sentences, proper names, and the word *I*. Teach the use of the period and interrogation point at the close of sentences.

REMEMBER.—1. To have all written work done neatly.

2. To vary the work with each lesson.

3. To point out specifically what the pupil is to do at his seat in the matter of preparation and writing.

4. To give short lessons and see that they are prepared as directed.

5. The recitations in this division should be frequent, short, and spirited.

6. To train the eye.—This is the most important of the senses, both in learning to read and in number work. Unless one is quick to recognize words, groups of words, and groups of objects, he cannot become a good reader, or ready in numbers.

To secure this, practice exercises like the following: Require the words at the head or close of the lesson to be pronounced rapidly at sight, both by column and line, before commencing the reading lesson proper.

7. By a series of easy questions, lead the child to express the thought naturally, and require him to answer such questions as the following: Who did this? What is said of—?

NUMBER.

The outline of the work in number can contain a few suggestions only. The division into months should not be followed if found to contain too much or too little. Be sure that whatever is attempted shall be thoroughly mastered. Frequent reviews are indispensable. All recitations should be rapid, accurate, and full of interest. Great attention should be paid to language forms. Insist upon good and complete sentences and see to it that the children image clearly the objects and operations designated by the words employed.

No teacher is prepared for this work who is not supplied with good manuals of primary number. They are abundant and cheap. Books treating of instruction in number should be carefully studied. Teachers' journals offer extremely valuable suggestions.

Number grows out of the idea of measurement. This should never be forgotten. It is the abstract character of so much of the number work

that makes it uninteresting and unprofitable. Make it extremely concrete. Employ the physical activities of the children constantly. What they discover by their own efforts is quite likely to make a lasting impression upon their minds.

FIRST MONTH.

Teach the children to count to ten. To do this employ simple and familiar objects. The test of the success of your work is the children's ability to discover readily any number of objects to ten. Attempt to recognize, as a whole, no group composed of more than four units. Invent plays in which the children give designated numbers of splints, spools, books, etc., to one another, telling what they have done in good sentences. Vary these exercises in many ways. Have the children make specified numbers of straight lines, horses, circles, etc., on the board. Let them tell the number of objects in the pictures in the reader, number of children in the class, of windows in the room, of doors in the home, etc., etc.

Begin the arithmetical operations with four objects. Have the pupils discover the sum of two splints and two splints, of two marks and two marks, of two pupils and two pupils, etc. Require careful statements and prompt speech.

Perform the same operations with two groups and two groups of objects. Similarly combine three splints and one splint, and one splint and three splints, getting the results. Similarly develop four less one; four less two; four less three; four less four; two times two; four times one; one and one; two and one; three less two; three less one; two less one; three less three, and two less two.

SECOND MONTH.

Teach the number of twos in four; one half of four; and one half of two, using objects and insisting on good statements.

Have each pupil supplied with a light one-foot ruler. Teach its name and use. Have the pupils draw lines on the board and measure them, making them a foot long. Statement: "*I have drawn a line one foot long.*" Have them draw two such lines and make the statement; three such lines; four such lines. Statement. Forms $|| \quad ||$: Statement: "*Two one-foot lines and two one-foot lines are four one-foot lines.*" Forms $|| \quad || \quad |$. Statement. Forms, — — — —. Erase one and make the statement. Same form. Erase two and make the statement. Same form. Erase three and make the statement.

Have pupils draw a line two feet long, thus: ———. Teach "*One half of a two-foot line is a one-foot line.*" Have them draw a four-foot line and teach "*One half of a four-foot line is a two-foot line.*" "*There are two two-foot lines in a four-foot line.*" "*There is one three-foot line and a one-foot line in a four-foot line.*" Rub out a foot line at the end of the four-foot line and make the statement. Reproduce the four-foot line; rub off two feet and make the statement. Reproduce. Rub out three and make the statement. Similarly teach that one foot is one fourth of four feet, and that three feet are three fourths of four feet. Now review all the facts without the lines requiring the children to image the results.





THIRD MONTH.

Teach the symbols, 1, 2, 3, 4, +, −, =, and build the tables $2+2=4$; $1+3=4$; $3+1=4$; $4-1=3$; $4-2=2$; $4-3=1$; $3-1=2$; $3-2=1$.

Have this work first placed upon the board. Take great pains to have the symbols well made. You are now ready for slate or tablet work. Remember that the number work is difficult for the children and must not be hurried.

Take the number six next. Develop the addition and subtraction facts with objects. Teach the inch. Supply a number of inch measures. Teach the inch on the foot ruler as far as six.

FOURTH MONTH.

Teach the symbols 5 and 6, \times , \div , $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$. Make addition and subtraction tables for five and six. Make multiplication tables for 2, 4, 6, using inch measures and other objects. Make the division tables for four and six, thus: $4\div2=2$; $6\div2=3$. "*Four divided into twos is two twos.*" Employ measurements as before to develop these ideas. Teach $\frac{1}{2}$ of 6; $\frac{1}{3}$ of 6; $\frac{2}{3}$ of 6.

Teach five with reference to four and six.

Furnish gallon, quart, and pint measures. Have not less than four quart measures and eight pint measures. Use the gallon and quart measures in reviewing the number four. Require complete statements and continue the measuring processes until the pupils can image them at pleasure. When the pupil says one fourth see that he thinks of the quart in its relation to the gallon. By insisting upon this work, addition, subtraction, and multiplication of fractions will become very simple. Work freely with one half, one fourth, two fourths, and three fourths.

FIFTH MONTH.

Teach the figures to eight. Using the pint measures and the inch measures, develop the addition and subtraction tables to eight, keeping up a constant review of all the preceding facts. Teach also, by means of the measures, 2×4 , and 4×2 , so that the pupil will not be confused by the order of the factors. Teach the corresponding divisions, testing all the time the imaging activity of the children. Using the pint measures, teach all of the eighths of eight, having the pupil think of the number eight as the number of pints in a gallon and consequently thinking of a gallon as representing the number eight.

SIXTH MONTH.

Teach one half of eight and all the fourths of eight. Using the pint measures and the quart measures, teach the changing of eighths to fourths and fourths to eighths and both to halves. Give practice in problems of this character; $\frac{1}{2}+\frac{1}{4}$; $\frac{1}{4}+\frac{1}{8}$; $\frac{2}{4}+\frac{3}{8}$; $\frac{1}{2}+\frac{5}{8}$; $\frac{1}{2}-\frac{1}{4}$; $\frac{1}{2}-\frac{1}{8}$; $\frac{1}{2}-\frac{3}{8}$; $\frac{1}{2}-\frac{5}{8}$; $\frac{1}{4}-\frac{1}{8}$. Also $2\times\frac{3}{8}$; $\frac{1}{2}\div\frac{1}{4}$; $\frac{1}{2}\div\frac{1}{8}$; $\frac{1}{2}\div\frac{3}{8}$; $\frac{6}{8}\div\frac{1}{4}$. Multiply these examples abundantly. Remember that the child, in dividing one half by one fourth is thinking of dividing four pints by two pints. See to it that he images in this concrete way.

SEVENTH MONTH.

Teach the number seven with all of its various facts by reference to six and to eight. Teach the figures nine and ten. Nine is not a difficult

number to teach because it is composite. Teach the addition and subtraction facts and the multiplication and division facts by the use of the objects already employed. Keep up a constant review. Do not forget to require prompt and clear statements in complete sentences. Now develop the fraction work in connection with nine as it has been done with the lower numbers. The fractions here used will be thirds chiefly. Do not stop to introduce ninths since there are but few fractional forms for this number, and you will have much time for reviewing the lower numbers.

EIGHTH MONTH.

Take the dime as a standard of reference. Use pennies for counters. Develop all of the number facts and introduce the fractions, fifths and tenths. Require the imaging in this new measure.

Much remains for the teacher to do in organizing this work. Take every opportunity to visit schools and get ideas from other teachers. Write to city superintendents for reports of the work in their schools. You will derive much advantage from these pamphlets.

WRITING.

Teach writing in connection with other subjects. Children should learn first, largely by imitation, to write words and sentences from other lessons. Teach pupils to write their own names; also names of brothers, sisters, parents, and playmates. Slate or paper should have rulings as a guide for the base lines of the writing. The pencil should be at least four inches long and reasonably sharp.

PHYSIOLOGY.--First Year.--Oral Work.

The teacher is expected to develop fully each topic in this and the succeeding sections, and also to add work along the same line as the class advances. Make work very simple. Use plain, familiar language.

Why We Eat.—Compare food of plants and animals. Some of the best foods. Food to body what coal and water are to engine. Variety of food necessary, animal, vegetable, and mineral. Alcohol and tobacco not foods. How we grow. Constant waste repaired by food. Saliva, its purpose, flows more freely while eating. Gum chewing exhausts salivary glands. Different food required in different climates.

Stomach, and Intestines.—Structure, use, and care. How food gets into the stomach. Condiments. Always be cheerful at meal time. Effects of alcohol on digestion.

Teeth.—Number, kinds, use, and care. Effects of tobacco on saliva and teeth.

Circulation.—Blood the river of life. The heart a wonderful little pump. How food mixes with blood and is carried to all parts of the body. Heart and circulation affected by use of alcohol and tobacco. Wine, cider, and beer all contain alcohol. Names of common alcoholic drinks. The use of stimulants and narcotics increases the appetite for them. The only safe cure for strong drink is never to touch it.



BY SAMUEL JOHNSON, ESQ.

IN THREE VOLUMES.

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SECOND YEAR.

TEXT-BOOK—Second Reader.

READING.—Second reader or readers.

SPELLING.—From readers and familiar words.

LANGUAGE.—In connection with reading.

NUMBER.—Combinations from ten to twenty with much concrete work.

WRITING.—Careful Practice.

GENERAL EXERCISES.—Music, Drawing, Morals and Manners.

READING.

Purposes.—1. To gather thought from printed page. 2. Expression.

Supplementary Reading.—There is no place in the school course where supplementary reading can be made more profitable. It should be, generally, *sight reading* of interesting stories, very easy second grade or hard first grade work. The following books are recommended: Bass's Nature Stories for Young Readers, (D. C. Heath & Co.); Bass's Animal Life, (D. C. Heath & Co.); Cyr's Second Reader, (Ginn & Co.); Easy Steps for Little Feet, (American Book Co.); Stickney's Pets and Companions, (Ginn & Co.); Æsop's Fables I. and II., (Educational Publishing Co.); Classic Stories for Little Ones, (Public School Publishing Co.); Wiltse's Grimm's Fairy Tales, (Ginn & Co.); Cooke's Nature Myths, (A. Flanagan); Morley's Seed Babies, (Ginn & Co.); Verse and Prose for Beginners, (Houghton, Mifflin & Co.); Johonnot's Book of Cats and Dogs, (Am. Book Co.); First Year Nature Reader, (Werner School Book Co.)

Choice Selections.—Pupils should be required to commit to memory short, choice selections to be recited before the class. These selections may be taken from the reader or from any source not more difficult than the reader, and should be understood before they are committed.

New Words.—Teach the new words at the head of each lesson so that pupils will know them at sight, pronounce them correctly, and know what they mean. Be careful to secure correct pronunciation and distinct articulation. To teach pupils to know words at sight, point rapidly from one word to another. To teach the meaning of words, require pupils to give the words in sentences, after they have been fully explained. Sentences should be both oral and written. To secure correct pronunciation, the teacher must be careful about his own pronunciation. Three recitations daily.

Expression.—Give additional attention to errors of pronunciation and to good expression. Aim at naturalness. Do not read very much for pupils to imitate. The skillful teacher succeeds in filling the pupils so full of the sentiment of the story, that expression is spontaneous. Do not teach that the voice should fall at a period and be kept up at a comma. It is not true.

NOTE.—Do not keep a class too long on one lesson. It is better to review it after a time than to read that in which the pupil has lost interest. Assign the lesson so that each pupil will know exactly what he is to do in preparing it. If necessary, prepare the lesson with the class. Occasionally read selections from other books to the class on the subject of the lesson. At the close of each lesson require one or more members of the class to reproduce the story from memory. Occasionally, the latter part of the year, have pupils write the story of the lesson from memory. Place upon the board questions on the lesson to which pupils shall write complete answers. Rapidly review lessons passed over.

Phonics.—Separation of words into elementary sounds, and making words from elementary sounds, as in reader.

SPELLING.

1. The principal work this year, is the learning of the new words (usually found at the head of the lesson) in the second reader. Teach pupils to pronounce these rapidly and correctly, at sight, before reading.

2. Language work for this year will give all additional words needed.

3. Attention must be given to the division of words into syllables as found in the reader; also to marking the accented syllable. The syllable is the unit of pronunciation, and good pronunciation can not be secured without a careful drill on syllables. Take a word like "un-der-stand." Which is the first syllable? How is it pronounced? Spell it by sound. Pronounce the second syllable; the third; how many sounds in the third syllable? Give them.

4. All abbreviations used in the book.

5. Occasionally require pupils to bring to the recitation a small portion of the lesson, neatly and correctly written on their slates. Be sure to examine this, and if wrong, in capitals or punctuation, hand it back for correction.

Dictation.—Occasionally dictate sentences and paragraphs from the reading lessons, to be reproduced on slate or paper by the pupil. See that the written forms are correct.

LANGUAGE.

Conversational Lessons.—Conversational lessons about stories in readers. Reproduction of stories. Write answers to questions on what is seen in a picture. Write full answers to direct questions; as, "Did he stand in the door?" The pupil will write: "He stood in the door." In writing answers to such questions, the pupil must change the initial letter, the form of the verb, and the terminal mark. Insert nouns in place of pronouns, in reading lessons, both orally and in writing.

Word Forms.—Teach the singular and plural forms of nouns; correct use of *a* and *an*, *is* and *are*, *was* and *were*, *has* and *have*, *seen* and *saw*, etc., in sentences. Continued careful practice in the use of capitals and terminal marks. Teach use of capitals in names of days of the week and months of the year, and further as found in the reader. It is well to use good language tablets.

Homonyms.—Teach the correct use and orthography of such words as *blue*, *blew*; *two*, *to*, *too*; *here*, *hear*; *no*, *know*; *be*, *bee*; *there*, *their*; *see*, *sea*; *new*, *knew*; *right*, *write*; *by*, *buy*; *ate*, *eight*; *led*, *lead*; *whole*, *hole*.

NUMBER.

FIRST MONTH.

For the number twelve make the foot the unit.

Develop the new facts in addition, subtraction, multiplication, division and partition by reference to 12 inches. Employ measurements in a great variety of ways to invent problems. Verify the results by measurements. Remember that the purpose of this work is to give to all of these operations an air of reality.

Teach the twelfths to 12, thus: 1 inch is $\frac{1}{12}$ of a foot, 2 inches are $\frac{2}{12}$ of





a foot, etc. Continue this drill until the twelfths of 12 are familiar. Use these facts in adding $\frac{1}{3}$ and $\frac{1}{4}$, thus: $\frac{1}{3}$ of a foot is 4 inches or $\frac{4}{12}$ of a foot. $\frac{1}{4}$ of a foot is 3 inches or $\frac{3}{12}$ of a foot. $\frac{4}{12}$ of a foot and $\frac{3}{12}$ of a foot are $\frac{7}{12}$ of a foot, or 7 inches.

Similarly find the sum of $\frac{1}{3}$ and $\frac{2}{4}$, $\frac{1}{3}$ and $\frac{3}{4}$, $\frac{2}{3}$ and $\frac{1}{4}$, etc. Similarly employ halves and sixths. In the same manner introduce subtraction of fractions.

SECOND MONTH.

Employing same plan, multiply $\frac{1}{4}$ by 2, by 3, by 4. Multiply $\frac{1}{3}$ by 2, by 3.

Find all the thirds, fourths, and sixths of 12. Introduce the idea of division of one fraction by another, thus: Find how many sixths there are in $\frac{1}{3}$; in $\frac{2}{3}$. " $\frac{1}{3}$ of a foot is 2 inches, or $\frac{2}{12}$ of a foot; $\frac{1}{3}$ of a foot is 4 inches or $\frac{4}{12}$ of a foot. There are 2 twos in 4."

Keep up a constant review. Count by twos to 12; by threes; by fours. Divide each of the numbers to twelve by each of the numbers below it, giving the quotient and remainder in each case, thus: "*There are two threes in 7 with a remainder of 1.*" Derive the facts by comparing a line three inches long with a seven-inch line. Teach the writing of numbers to 25. Teach the number eleven by reference to 10 and 12.

THIRD MONTH.

Teach fourteen by reference to twelve, using the concrete illustrations with the foot rule and the inch measures. Supply the children with measures of various lengths, as 2 inches, 3 inches, 4 inches, etc. Each of these measures should have the inches marked. Teach all of the number facts about thirteen in the same manner.

When the number sixteen is reached, the familiar unit, the pound, with its sixteen ounces, may be used with profit.

The fractional parts of the pound most commonly used are one half and the quarters, but the eighths should also be employed here.

Make addition and subtraction tables for all work up to this point, reviewing them freely and requiring clear statements. Use the liquid measures and the foot rule constantly.

FOURTH MONTH.

Fifteen is more easily taught than eleven or thirteen. Teach all of the facts. Show constantly its relation to ten and five. Develop the division and partition tables for all of the numbers thus far learned.

Teach all of the fifths of fifteen. Teach the addition of one fifth and one third, by reference to fifteen. Teach the subtraction of one fifth from one third by same method. Keep all previous work in constant review.

FIFTH MONTH.

Teach the number eighteen with reference to sixteen, using the pound and ounces, and with reference to twelve, using the foot and inches.

All of the addition facts, that is, the sums of any two numbers not greater than nine, have now been learned. Make a list of them. The same is true of the subtraction facts. Make a list of them and of all multiplication, division, and partition facts involved in numbers to eighteen, and keep up a constant review of them.

SIXTH MONTH.

Teach seventeen with reference to sixteen and eighteen. Divide

eleven by each of the numbers below it, giving the quotient and remainder. Do the same with thirteen, fifteen, and seventeen.

Distinguish between problems in which the quotient may be a mixed number and in which the remainder is left undivided, thus: Divide 5 apples equally between two boys. What will each boy receive? If we were to attempt to divide 5 marbles should we cut the fifth marble into two equal parts?

Review the divisions to ten, making the quotients mixed numbers where the division is not exact, thus: "*In 5 there is one 3 and $\frac{2}{3}$ of another three.*" Derive the results by a comparison of measures, thus: Compare a 3-inch measure with a 5-inch measure for the above result.

SEVENTH MONTH.

Teach all number facts to 20, referring to 10, especially, in developing them. Teach 19 by reference to 18 and 20. Count by twos, fours, fives, and tens to 20. This should be done rapidly and accurately.

Divide 19 by 3, 4, 5, 6, 7 and 8, giving quotient and remainder and also giving quotient as a mixed number.

With the foot as a standard of reference give problems like the following: $1\frac{1}{8} \div 2$; $1\frac{1}{4} \div 3$; $1\frac{1}{4} \div 5$; $1\frac{1}{3} \div 4$. Method: $1\frac{1}{8}$ feet equals 14 inches or $\frac{1}{2}$ of a foot. $\frac{1}{2}$ of $\frac{1}{2}$ of a foot = $\frac{1}{4}$ of a foot.

EIGHTH MONTH.

Add $\frac{2}{3}$ and $\frac{3}{4}$, referring to the foot as a standard, thus: " $\frac{2}{3}$ of 12 inches equals 8 inches, or $\frac{2}{3}$ of a foot. $\frac{3}{4}$ of 12 inches equals 9 inches, or $\frac{3}{4}$ of a foot."

Make additions and subtractions of all fractions in which 12 may be used as the common denominator. Divide $\frac{2}{3}$ by $\frac{1}{4}$, $\frac{3}{4}$ by $\frac{1}{3}$ and by $\frac{2}{3}$, employing the same plan. Similarly employ fractions whose denominators may be referred to 16, the number of ounces in a pound.

By the end of the second year facility should have been acquired in the fundamental operations to 20. The finding of sums from 11 to 18 may be rendered quite easy, when combining two numbers each less than 10, by withdrawing from the smaller enough to make the larger 10, thus: $8+7=8+2+5$. Multiply addition problems in which several numbers are to be combined, the sum not to exceed 20.

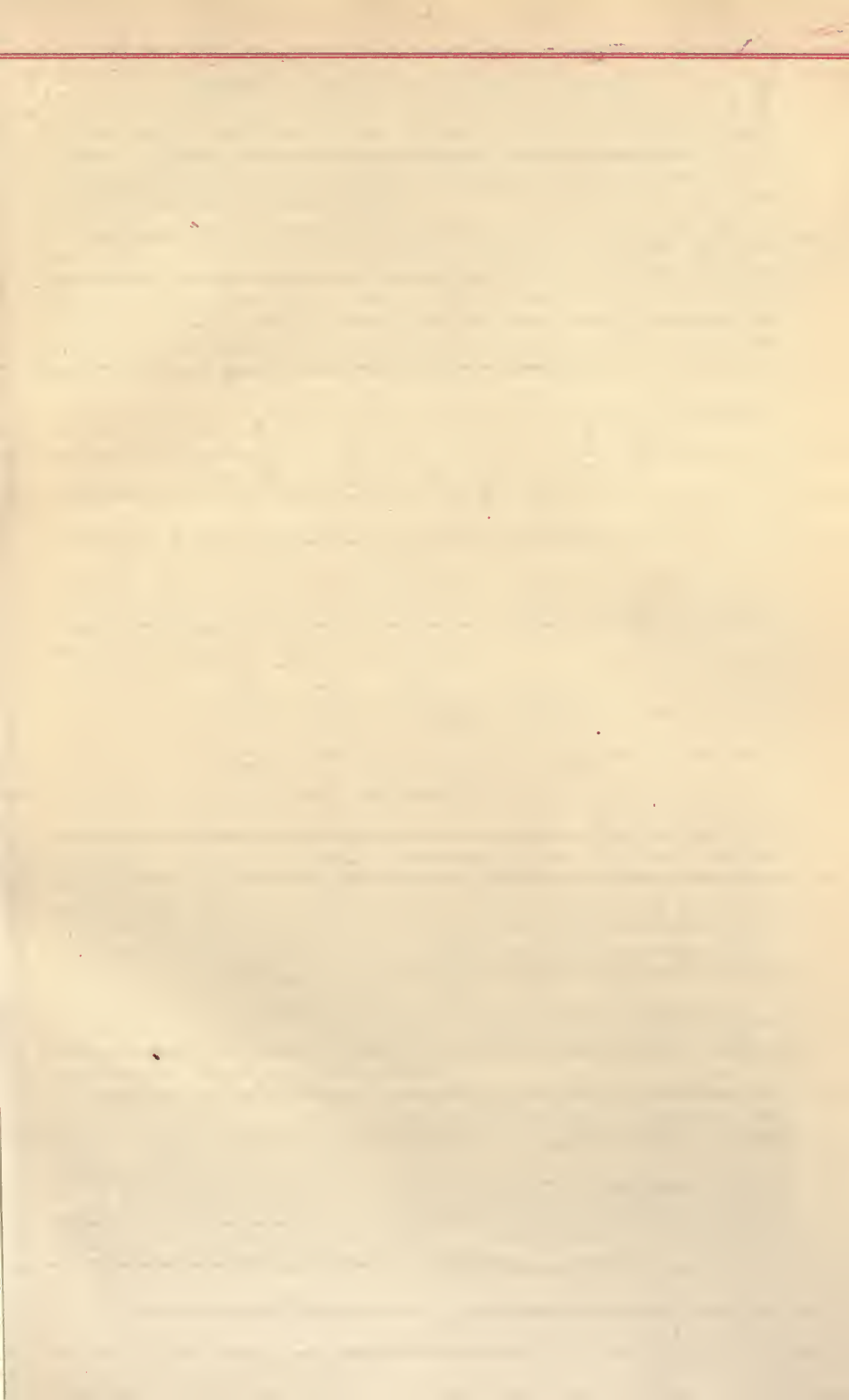
WRITING.—Second and Third Years.

Materials.—One copybook for the entire year, good ink, pen that will not scratch, straight holder, penwiper, blotter, practice paper, foolscap cut in sheets about the size of copybook, in which it should be kept, and blackboard.

Copybooks.—Use more for their copies than their writing space. Refer frequently to the copies and study forms of letters and words, even when writing on the board or practice paper.

Position and Penholding.—Follow directions on cover of copybook.

Capitals.—A good plan is to teach the capitals incidentally. When pupils have use for a capital teach them how to make it. Near the close of the year review and make a special study of the capitals. Their classification may be found on the cover of almost any copybook.





One of the characteristics of vertical writing is small and simple capitals. Many of them differ from the small letters only in size.

Small Letters.—Take up the small letters by groups (See Fig. 1), giving special attention to the types.

Of groups 1 and 6, teach *w* as the type. Show that its first part is like *i* and *u*; its last part like *v* and *b*. Show the common fault of a sprawling *w*, caused by making the last part too wide, and not finishing with right horizontal curve. Teach pupils to criticise their own work. Practice *w* by itself. Write small words beginning with it, or with *i*, *u*, *v*, or *b*. In body writing induce special care for these five letters to fix the correct mental picture of each and the habit of making it.

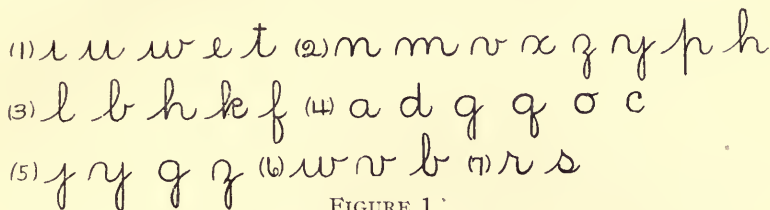


FIGURE 1.

Of groups 2 and 3, take *h* as the type. Compare *h* with *n*, *m*, *v*, *x*, *y*, *z*, and *p*; they all have a part in common. Notice especially the broad, round turn at the top. Learn first to make *n*.

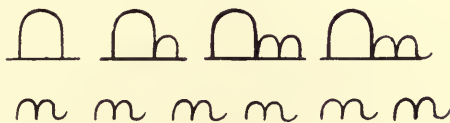


FIGURE 2.

Figure 2 is suggestive for the first lesson, which should be written at the board. For the next lesson review briefly and continue by having each pupil write, at the board, a square yard of *n*'s. For the next, on practice paper review *w* and take up *v*. Teach its form and have short words written which begin with *v*. For the next, write in copybook the copy that uses the greatest number of letters belonging to group 2, Fig. 1. For the next, write a quotation on the board to be copied, and underline the letters of group 2 wherever they occur.

The unit of purpose in these lessons is the element common to group 2—the last part of *h*, which should be carefully made. Not less than a month's work should be given to group 2.

The upper loop should then be taken up. Because of its importance teach it thoroughly according to the plan given above. Teach all the letters of group 3 in the same connection and write words containing them. Review groups 1 and 2.

Of groups 4 and 5 take *g* as a type. Let the method described for *h* be suggestive. Simplify the process by teaching first *a*, and other letters of group 4; then *j*, and others of group 5. Review groups 1, 2, and 3; use the copybook and practice freely on foolscap.

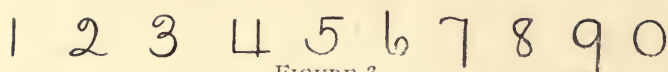


FIGURE 3.

Figures.—At some time during the year teach pupils to make figures rapidly and well. Their constant use is demanded in a practical way.

PHYSIOLOGY.—Second Year.—Oral Work.

The Voice.—Perfection and beauty. Structure and use of vocal organs.

The Lungs.—Why we breathe. Effects of alcohol and tobacco on lungs. Smoking has a tendency to lead to drinking. The younger the person using tobacco the more serious will be its effects.

The Skin.—Its structure, use, and care. Perspiration. The Hair and Nails, structure, use and care of.

Clothes.—Clothes keep us warm but do not make us warm. Wet clothes. Bad effects of tight clothing about the neck, waist, limbs, and feet. Remove rubbers in schoolroom. Avoid clothing one part of the body warm and leaving other parts exposed. Do not change suddenly from thick to thin clothing.

The Five Senses.—Structure, care and use of.

The Nerves.—The telegraph system of the body. Sleep. Regular hours for work, amusement, and rest.

Muscles.—Structure, use and kinds. How they act. Some voluntary, some involuntary. Alcohol and muscles.

Bones.—Use, care, condition at different ages. How they are joined together.

THIRD YEAR.

TEXT-BOOKS.—Third Reader, Language Book, Elementary Arithmetic, Primer of Physiology.

READING.—Third reader or readers.

SPELLING.—Words from readers and from other lessons.

LANGUAGE.—More distinctive work than preceding years.

ARITHMETIC.—Elementary arithmetic begun.

PHYSIOLOGY AND HYGIENE.—Primary work.

GENERAL EXERCISES.—Music, Drawing, Morals and Manners.

READING.

Objects.—1. To complete the third reader.

2. To continue the drill in ready recognition of words and phrases.

3. To teach the pupil to gather thought from the printed page and to use the book as a source of information and pleasure.

Suggestions.—Give particular attention to distinct articulation, correct pronunciation, and the diacritical marks. Secure compass and volume of voice, with pleasant tones. Train the pupil to express the thoughts of the author in language entirely his own. Question carefully on the lesson to provoke thought on the part of the pupil.

The objects aimed at are: (1). Mastery of the thought; its truth, beauty, and purpose. The mind must dwell upon the thought until its force is understood and felt. (2). A natural expression of the thought.



Supplementary Reading.—See suggestions about the use of supplementary reading in first and second years. The following books are recommended for this grade: Stories of Indian Children, (Public School Publishing Co.); Cyr's Third Reader, (Ginn & Co.); Scudder's Fables and Folk Lore, (Houghton, Mifflin & Co.); Heart of Oak No. II, (D. C. Heath & Co.); Stickney's Æsop's Fables, (Ginn & Co.); McMurry's Robinson Crusoe, (Public School Publishing Co.); Short Stories of Our Shy Neighbors, (American Book Co.); Golden Book of Choice Reading, (American Book Co.); Book of Tales, (American Book Co.).

SPELLING.—Third and Fourth Years.

In Connection with the Third Reader.—1. If no spelling book is used with third reader, note the work of the second reader for suggestions, and advance the work as below.

2. Note that most third readers have the new and more difficult words of each lesson arranged with syllabication, accents, and diacriticals for oral spelling, either by the alphabet or phonic method.

3. Dictation should be given by the teacher to give an enlarged meaning to the words used—thus, for the word *glade*, the teacher will dictate—"The opening in the wood was without trees—a pretty *glade*."

4. Word analysis of simple English derivatives should be begun; as, *er*=one who, or that which—*skat-er*, *skater*=one who skates. The final *e* of skate is dropped "before a suffix beginning with a vowel."

5. In the same way teach some of the prefixes; as, *un*=not, etc. One lesson a week of this kind will give a good start in word analysis.

In Connection with the Spelling Book.—1. If a spelling book is used, follow it and *master* it. Do not waste the term on the first few pages.

2. Require each lesson to be pronounced promptly by the class with open book, before it is studied or recited.

3. Keep up frequent reviews of these pronouncing exercises, and on Friday, pronounce in review, all the lessons of the week.

4. Require the words in *some* lessons to be arranged alphabetically; by number of syllables; by accent.

5. Monosyllables may be arranged by vowel sounds, and the proper mark affixed.

6. Keep up a practice on syllables, as indicated in former grade. Remember the *syllable* is the unit of pronunciation.

LANGUAGE.

To the Teacher.—It will be observed that the language work in this course is different from what is usually found in such manuals. That the teacher may catch the spirit of the work, attention is called to the following brief quotations:

"The first requisite of an ideal system of language work would appear to be an abounding wealth of thought material. * * * Grinding without a grist produces as little flour in educational as in flouring mills."—*Prof. Chas. DeGarmo.*

"Make the thought the chief thing and the act of expression a kind of incidental necessity, and thus lead the child imperceptibly through what otherwise might be an irksome task. Keep up the child's *delight* in expressing thought by making it as fresh when written as when spoken. Let all the drill exercises and all the criticisms which are intended to secure correctness of expression be carried on in the interest of thought. The language should be good not so much for its own sake as for the thought which it embodies."—*Prof. Samuel S. Greene.*

"Language should not be taught for the sake of language itself; but language should be used in order to enhance directly the intensity of the thought that is being evolved.

In other words, the development of the child is the motive, and the use of language aids directly in that motive."—*Col. F. W. Parker.*

"Never ask a pupil to express a thought in writing until he sees clearly what he is trying to express. If one is trained from the first to express only those thoughts which are clearly seen, he will acquire greater accuracy of expression."—*Mary F. Hyde.*

"The teacher must remember that language is an expression of thought; and consequently, that correct thinking should precede expression. * * * Insist upon vigorous thinking before expression. This excellent rule will assist in securing good work in language."—*Profs. Robert C. Metcalf and Orville T. Bright.*

Alternation.—In most country schools there is not time for more than one class in language; therefore the work in this subject for the third and fourth years is arranged to alternate. During the school year of 1897-98 have all pupils of these two grades study the language given for the third year. During the next year, 1898-99, have all pupils of the two grades, including those just ready to enter the third year, study the language given in the fourth year. In the year following, 1899-1900, those who have had two years of language work may pass on to the work of the fifth year, while those who have studied fourth year language but not that of the third year may take third year language with the class studying the subject at that time, and at the close of the year be promoted to the fifth year work. So continue to alternate from year to year.

FIRST MONTH.

1. *Reproduction Story.*—Teacher tell or read in an interesting manner the fable of "The Lion and the Mouse" and then have pupils reproduce it, first orally and afterward in writing. Treat all the stories for the year in like manner.

THE LION AND THE MOUSE.

NOTICE.—There are several editions of *Æsop's Fables* for the use of schools, in which the stories are told in interesting and simple language. On account of the limited space the fables are given here in their shortest form.

"A lion, tired with the chase, lay sleeping at full length under a shady tree. Some mice, scrambling over him while he slept, awoke him. Laying his paw upon one of them, he was about to crush him, but the mouse implored his mercy in such moving terms that he let him go. Some time after the lion was caught in a net laid by some hunters, and, unable to free himself, made the forest resound with his roars. The mouse whose life had been spared came, and with his little sharp teeth soon gnawed the ropes asunder and set the lion free."

2. *Picture Lesson.*—Have each pupil make a drawing, even if ever so crude, to represent some incident in this story. Let each pupil select the incident that he prefers to picture. Afterward describe the picture drawn, also pictures illustrating this story found in books.

The following stories are recommended for similar exercises: "The Miraculous Pitcher," (Hawthorne's *Wonder Book*); "The Ant and the Dove," (*Æsop's Fables*).

3. *Information Lessons.*—Description and habits of lion and mouse.

4. *Sentence.*—Use the work in above exercises to develop the idea of a sentence; four kinds of sentences—declarative, interrogative, imperative, exclamatory; how sentences begin and end.

5. *Punctuation.*—Use of period, interrogation point, and exclamation point at the close of sentences.

6. *Margins.*—What a margin is; width of margin to be left at the top, left side, right side, and bottom of a printed sheet.

7. *Word Study.*—Correct use of *teach* and *learn*.





SECOND MONTH.

1. *Reproduction Story*.—Fable of "The Shepherd Boy and the Wolf."

THE SHEPHERD BOY AND THE WOLF.

"A mischievous lad, who was set to mind some sheep, used, in jest, to cry 'Wolf! Wolf!' When the people at work in the neighboring fields came running to the spot he would laugh at them for their pains. One day the wolf came in reality, and the boy, this time, called 'Wolf! Wolf!' in earnest; but the men, having been so often deceived, disregarded his cries, and the sheep were left at the mercy of the wolf."

2. *Picture Lesson*.—Have each pupil make a drawing to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: "The Golden Touch," (Hawthorne's Wonder Book); "The Boy and the Filberts," (Æsop); "The Golden-Rod and Aster," (Cooke's Nature Myths).

3. *Information Lessons*.—Description and habits of the wolf and sheep.

4. *Noun*.—Use the work in above exercises to teach and illustrate what a noun is; distinguish between common and proper nouns so as to know when to begin a noun with a capital letter; make a list of nouns from the reader and learn to spell their plurals.

5. *Punctuation*.—Correct use of the comma in writing the name of a place and a date as they should appear at the head of a letter.

6. *Paragraphing*.—What a paragraph is; reason for dividing composition into paragraphs; how far to indent the first line of a paragraph.

7. *Word Study*.—Correct uses of *guess* and *think*.

THIRD MONTH.

1. *Reproduction Story*.—Fable of "The Dog and His Shadow."

THE DOG AND HIS SHADOW.

"A dog, bearing in his mouth a piece of meat that he had stolen, was crossing a smooth stream by means of a plank. Looking in, he saw what he took to be another dog carrying another piece of meat. Snapping greedily to get this as well, he let go the meat that he had, and lost it in the stream."

2. *Picture Lesson*.—Have each pupil make a drawing to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: "The Paradise of Children," (Hawthorne's Wonder Book); "The First Thanksgiving," (The Story Hour by Kate Douglas Wiggin).

3. *Information Lessons*.—Description and habits of the dog. Coal—what it is; where and how obtained; its uses.

4. *Verb*.—Use the work in above exercises to teach what a verb is; subject and predicate of a sentence; change of form of verb to agree with subject; forms of the verb and their correct use.

5. *Punctuation*.—Use of the hyphen when a word is divided at the end of a line; words should be divided between syllables; use of the hyphen in certain compound words.

6. *Plurals*.—Make a list of nouns ending in *y* and write their plurals, and deduce a rule therefrom.

7. *Word Study*.—Correct use of *sit* and *set*.

FOURTH MONTH.

1. *Reproduction Story*.—Fable of "The Hare and the Tortoise."

THE HARE AND THE TORTOISE.

"The hare, one day, laughing at the tortoise for his slowness and general unwieldiness, was challenged by the latter to run a race. The hare, looking on the whole affair as a great joke, consented, and the fox was selected to act as umpire and hold the stakes. The rivals started, and the hare, of course, soon left the tortoise far behind. Having come midway to the goal, she began to play about, nibble the young herbage, and amuse herself in many ways. The day being warm, she even thought she would take a little nap in a shady spot, as, if the tortoise should pass her while she slept, she could easily overtake him again before he reached the end. The tortoise meanwhile plodded on, unwavering and unrelenting, straight toward the goal. The hare, having overslept herself, started up from her nap, and was surprised to find that the tortoise was nowhere in sight. Off she went at full speed, but on reaching the winning-post found that the tortoise was already there, waiting for her arrival."

2. *Picture Lesson*.—Have each pupil make a drawing to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: "The Pygmies," (Hawthorne's Tanglewood Tales); "The Blind Man and the Lane Man," (Æsop); "Piccola," (The Story Hour by Wiggin).

3. *Information Lessons*.—Description and habits of hare and tortoise.

4. *Adjective*.—Use the work in above exercises to teach what an adjective is; use of capital letter in beginning a proper adjective; comparative and superlative forms of a list of adjectives selected from reading lessons; when to use comparative and superlative forms.

5. *Punctuation*.—Correct use of the comma in writing an address as it should appear on an envelope.

6. *Plurals*.—Make a list of nouns ending in *f* and *fe* and write their plurals. Deduce rule.

7. *Word Study*.—Correct use of *a* and *an*, *this* and *that*, *these* and *those*.

FIFTH MONTH.

1. *Reproduction Story*.—Fable of "The Wind and the Sun."

THE WIND AND THE SUN.

"A dispute arose between the north wind and the sun as to which was the stronger of the two. Seeing a traveler on his way, they agreed to try which could the sooner get his cloak off him. The north wind began, and sent a furious blast, which, at the onset, nearly tore the cloak from its fastenings; but the traveler, seizing the garment with a firm grip, held it round his body so tightly that Boreas spent his remaining force in vain. The sun, dispelling the clouds that had gathered, then darted his most sultry beams on the traveler's head. Growing faint with the heat, the man flung off his cloak and ran for protection to the nearest shade."

2. *Picture Lesson*.—Have each pupil make a drawing to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: "The Three Golden Apples," (Hawthorne's Wonder Book); "Balder," (Cooke's Nature Myths).

3. *Information Lessons*.—Interesting facts about the sun and the moon.

4. *Adverb*.—Use the work in above exercises to teach and illustrate what an adverb is; location of adverb in a sentence; distinguish between use of adverbs and adjectives after such words as look, seem, feel, appear, smell, and taste.





5. *Punctuation*.—Use of comma to separate name of a person addressed from rest of the sentence.

6. *Plurals*.—Make a list of nouns ending in *o* and spell their plurals.

7. *Word Study*.—Correct use of *real*, *awful*, and *very*.

SIXTH MONTH.

1. *Reproduction Story*.—Fable of "The Thirsty Crow and the Pitcher."

THE THIRSTY CROW AND THE PITCHER.

"A crow, ready to die with thirst, flew with joy to a pitcher, hoping to find some water in it. He found some there, to be sure, but only a small quantity at the bottom, which he was quite unable to reach. He then tried to overturn the pitcher, but it was too heavy. So he gathered up some pebbles, with which the ground near was covered, and, taking them one by one in his beak, dropped them into the pitcher. By this means the water gradually reached the top, and he was able to drink at his ease."

2. *Picture Lesson*.—Have each pupil draw a picture to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: "Phrixus and Helle," (Cox's Tales of Ancient Greece); "George Washington," (The Story Hour); Stories of Lincoln, Longfellow, and Lowell.

3. *Information Lessons*.—Description and habits of the crow. Manufacture of porcelain or China ware; also of tile and brick.

4. *Pronoun*.—Use the work of above exercises to teach and illustrate what a pronoun is; when to use a pronoun; list of personal pronouns and their use as subjects, objects, and in predicate; relative position of personal pronouns when two or more of them are used in a series; correct use of *who*, *which*, *that*, and *what*; *I*, always capital.

5. *Punctuation*.—Correct use of the comma in the subscription of a letter.

6. *Plurals*.—List the nouns in common use that form their plurals irregularly, and learn their plurals.

7. *Word Study*.—Correct use of *carry*, *bring*, and *fetch*.

SEVENTH MONTH.

1. *Reproduction Story*.—Fable of "The Dog in the Manger."

THE DOG IN THE MANGER.

"A dog was lying in a manger full of hay. An ox, being hungry, came near and was going to eat of the hay. The dog, getting up and snarling at him, would not let him touch it. 'Surly creature,' said the ox, 'you cannot eat the hay yourself, and yet you will let no one else have any.'"

2. *Picture Lesson*.—Have each pupil draw a picture to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: "The Golden Fleece," (Hawthorne's Tanglewood Tales); "Apollo and Hyacinthus," (Bulfinch's Age of Fable); "Iris Bridge," (Cooke's Nature Myths).

3. *Information Lessons*.—Interesting facts about the whale.

4. *Preposition*.—Use the work of above exercises to teach and illustrate what a preposition is; ordinarily a sentence should not end with a preposition; make a list of common prepositions and use correctly in sentences.

5. *Punctuation*.—Use of period in writing initials and abbreviations.

6. *Abbreviations*.—What an abbreviation is; when proper to use abbreviations; abbreviations for names of the months; a list of abbreviations in common use; what an initial is and how written.

7. *Word Study*.—Correct use of *in* and *into*.

EIGHTH MONTH.

1. *Reproduction Story*.—Fable of "The Wolf in Sheep's Clothing."

THE WOLF IN SHEEP'S CLOTHING.

"A wolf, wrapping himself in the skin of a sheep, by that means got admission into a sheepfold, where he devoured several of the young lambs. The shepherd, however, soon found him out and hung him up to a tree, still in his assumed disguise. Some other shepherds, passing that way, thought it was a sheep hanging, and cried to their friend, 'What, brother! is that the way you serve sheep in this part of the country?' 'No, friends,' cried he, giving at the same time the carcass a swing round, so that they might see what it was; 'but it is the way to serve wolves, even though they be dressed in sheep's clothing.'"

2. *Picture Lesson*.—Have each pupil draw a picture to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: "The Pomegranate Seeds," (Tanglewood Tales); "Latona and the Rustics," (Bulfinch's Age of Fable).

3. *Information Lessons*.—The production and uses of wool.

4. *Conjunction and Interjection*.—Use the work of the above exercises to teach what a conjunction is; when to omit a conjunction and what takes its place; a list of the most common conjunctions and their correct use in sentences; what an interjection is; use of comma and exclamation point after an interjection; when to use *O* and when to use *oh*; a list of common interjections and their meanings.

5. *Punctuation*.—Learn use of the semicolon by observing its use in the reader.

6. *Marks of Correction*.—Use of the caret; the dele; changing small letters to capitals; changing capitals to small letters; the paragraph.

7. *Word Study*.—Correct use of *like* and *love*.

ARITHMETIC.

The work of the year includes the mastery of addition and subtraction, multiplication, division, and partition to 100, and the measurement of perimeters and areas. Frequent exercises with the groups of fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$; $-\frac{1}{2}$, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{6}$, $\frac{1}{12}$; $-\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{10}$, should be kept up during the year. The class should take up some good primary text-book. There will be needed a tape line, a half-dozen yardsticks, 200 inch-squares of cardboard, strips of cardboard marked off into inch squares, a box of No. 8 rubber bands, and 2000 wood toothpicks bundled into tens and hundreds.

New topics or new processes should be taught orally, usually with objects; concrete problems should follow touching the child's experiences and interests. An abstract problem is useful for drill, if the pupil can give a "number story" to fit it. See that the signs \times and \div are understood, thus: $\frac{4}{3} \times 6c$ (read four-thirds of six cents) means four times one





third of six cents. $6c \times 4\frac{2}{3}$ (read six cents multiplied by four and two thirds) means four times 6 cents plus two thirds of six cents. $6\text{ in.} \div 2\text{ in.}$ (read six inches *divided by* two inches) means six inches divided into twos of inches. $6\text{ in.} \div 2$ means one half of six inches. This distinction must be clearly seen. It is better to call the first type *measurement*, the second *partition*; either is division.

FIRST MONTH.

Teach with bundled splints reading and writing numbers to 100.

Review addition facts to 12 and add by endings to 100, thus:

9	19	29	39	49
3	3	3	3	3
12	22	32	42	52

Subtract by endings, thus:

11	21	31
3	3	3
8	18	28

Add by 10's to 100. Multiplication table of 10's. Question on dollars, dimes, cents. Add by 5's to 50. Multiplication table of 5's. Arrange 5-inch strips or rows of dots

• • • • •
• • • • •
• • • • •



to bring out the facts of the table. Drill upon the table in all its forms:

$$3 \text{ 5's} = 15. \quad 5 \times 3 = 15. \quad 15 \div 5 = 3. \quad \frac{1}{5} \text{ of } 15 = 3.$$

SECOND MONTH.

Add mixed numbers	$25\frac{1}{2}$	$21\frac{3}{4}$	$37\frac{1}{8}$
	$2\frac{1}{2}$	$4\frac{1}{4}$	$4\frac{1}{8}$

Teach the term *perimeter* and find, by measuring to the eighth of an inch and adding, perimeter of tablet page, desk-top, etc.

Review addition and subtraction table to 16 and add by endings to 100.

Subtraction—with minuend ending in 3, 4, 5, thus: 13 23 14 24

Add by 2's and 4's to 50, and develop table of 2's 6 6 8 9

and 4's as in last month. Reduce bushels to pecks, — — — —

pecks to bushels, gallons to quarts, integers to halves, fourths, fifths, tenths. Subtraction of mixed numbers.

THIRD MONTH.

Review addition and subtraction to 20 and add by endings to 100.

Subtraction—with minuend ending in 6, 7, 8. Adding by 3's to 50. Develop

table of 3's. Yard-foot problems. Oral two-step problems; as, "Cost

of 8 barrels of flour, if 5 barrels cost 20 dollars?" What is $\frac{3}{8}$ of 35? Reduce

halves, thirds, fourths, fifths to integers. Illustrate fraction work with divided paper circles.

FOURTH MONTH.

Add mixed columns to 100. Frequent oral exercises in adding num-

bers as dictated. Subtraction—with minuend ending in 9, 0. Explain

thermometer and find difference between various readings. Multiply

two-place numbers by integers

22	$32\frac{1}{4}$	$26\frac{1}{8}$
4	3	4
—	—	—

FIFTH MONTH.

Continued *drill* in addition, including mixed numbers and fractions of the groups studied. Add by 8's to 80 and table of 8's. Dry measure. Teach with actual measures. Subtraction,—three-place numbers. Teach changes in minuend with bundled sticks. Simple divisions: 2)64, 3)96, etc. Teach with bundled splints reading and writing numbers to 1000. Writing numbers to 10000.

SIXTH MONTH.

Continued practice in addition and subtraction. Material for subtraction problems may be found in dates of men and events, studied during month, distances to cities of which the children have heard (R. R. Guide), populations of neighboring villages, townships, counties, and especially in measurements made by class. Multiplication,—table of 9's—three-place or four-place numbers. Measure tablet page, window pane, etc., and teach how to compute areas by dividing rectangle into rows of unit squares. Addition of U. S. money.

SEVENTH MONTH.

Continued drill in addition, subtraction, multiplication. Table of 7's. Problems in weeks and days. Divide (measurement) numbers 20—30 by divisors 2—10, and require corresponding concrete problems.

$30 \div 2 = 15.$	In 30 pints there are ——— quarts.
$30 \div 3 = 10.$	In 30 feet there are ——— yards.
$30 \div 4 = 7\frac{1}{2}.$	In 30 pecks there are ——— bushels.
$30 \div 5 = 6.$	In 30 cents there are ——— nickels.
$30 \div 6 = 5.$	In 30 sixths there are ——— ones.
$30 \div 7 = 4\frac{2}{7}.$	In 30 days there are ——— weeks.

Division of three-place numbers by 2, 3.

EIGHTH MONTH.

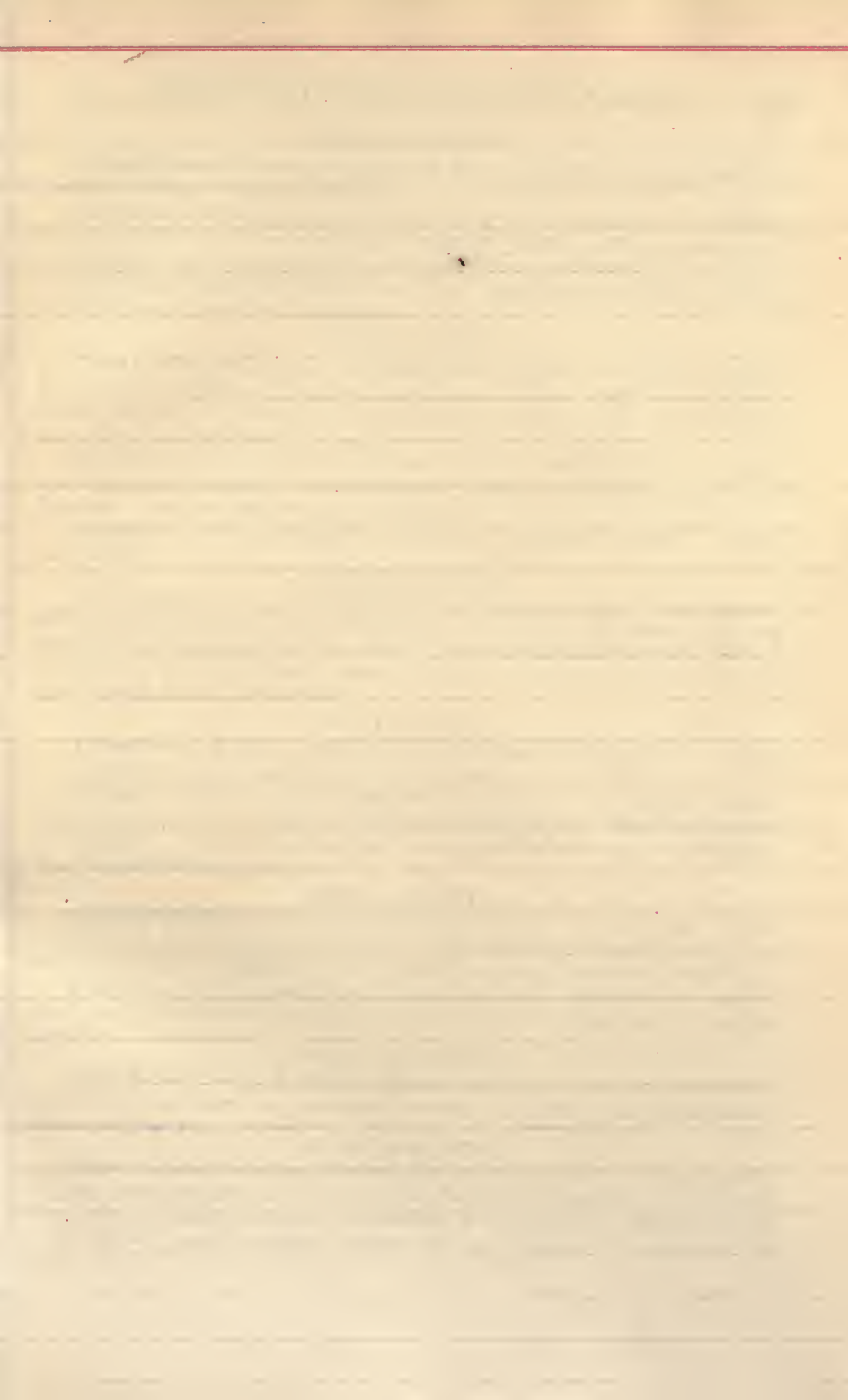
Divide 31—40 as in last month. Teach forms of merchants' bills. Buy common articles and compute cost. Teach the divisions of the dial, and halves, thirds, fourths of 60. Table of Time Measure. Divide integers by fractions, by reducing to same unit; as, "6 days is how many times $\frac{2}{3}$ of a day?"

PHYSIOLOGY.—Third and Fourth Years.

FIRST MONTH.

How to Eat.—Chew food well. Eat slowly. Do not eat too often. Do not eat or drink too much. Food and drink should not be too cold or too hot; as hot tea or coffee, ice cream, ice water. Avoid green fruit. Explain why it is injurious. Name some results of indigestion.

Test eyes of pupils by placing objects at different distances before children. Test ears by placing watch at different distances. If any are found with defective eyes or ears, seat them where they can hear and see to the best advantage.





SECOND MONTH.

Cleanliness.—Teach cleanliness in dress and person. Necessity of general bathing. When to bathe.

Exercise.—Necessity for. Not too long or too violent, as jumping rope, running, etc. Avoid sitting or lying on damp ground or in a draft, especially after violent exercise. Sit, stand, and walk erect.

Caution.—Keep feet warm and dry. Necessity for extra clothing when exposed to cold or dampness.

THIRD MONTH.

Parts of Body.—Learn principal parts of body; as, skin, muscle, bone, head, neck, trunk, arms, legs, throat, nape, waist, elbow, wrist, ankle, instep, etc. Flesh may be divided into lean and fat. Use of each. How life is sustained in hibernation.

Food.—Simple explanation of necessity for food and drink. Drink but little while eating. Give reasons. Water, the natural drink of all animals. Mind affected by use of alcohol.

Caution.—As far as possible keep bones in proper position. Avoid late hours.

FOURTH MONTH.

Circulation.—Heart forces blood to all parts of body. Trace course of blood through body. Uses of arteries, capillaries, and veins. Explain difference between arteries and veins. How distinguish between flow of venous and of arterial blood. How alcohol gets into the blood. How to apply bandages to stop bleeding.

FIFTH MONTH.

Digestion.—Simple explanation of digestion and absorption. How does blood carry nutriment to all parts of body.

Tobacco.—History and composition of tobacco. Use is filthy, expensive, and an unnatural habit. Cigarettes made of what. Note the distress of digestive organs attending first experience in chewing or smoking. Cost of alcohol and tobacco.

SIXTH MONTH.

Care of Body.—Cultivate graceful movements. Care of hair, nails, hands, face, etc. Keep teeth clean. Avoid cracking nuts with teeth. Do not use metallic toothpicks. Necessity of bones as framework of body.

Caution.—Always breathe with mouth closed, especially in winter. Open mouth indication of stupidity. Put on extra clothing when exposed to cold and dampness.

SEVENTH MONTH.

Five Senses.—Teach the five senses, their uses, and improvement. Teach also voluntary and involuntary muscles. Habits and thoughts are shown in the face.

EIGHTH MONTH.

Muscles and Joints.—What muscle is. Have class examine muscle of beef, pork, chicken, etc. Show how the body is moved by muscles. Have pupils examine tendons, ligaments, and cartilage. Explain use of each. Have pupils examine different kinds of joints. Explain use of each.

FOURTH YEAR.

TEXT-BOOKS.—Third Reader, Language Book, Elementary Arithmetic, Primer of Physiology.

READING.—Another third reader completed.

SPELLING.—See third year.

LANGUAGE.—Composition, punctuation, and parts of speech.

ARITHMETIC.—Elementary arithmetic.

WRITING.—See sixth year.

PHYSIOLOGY AND HYGIENE.—See third year.

GEOGRAPHY.—Oral geography.

GENERAL EXERCISES.—Music, Drawing, Morals and Manners.

READING.

Another third reader finished and reviewed. The general observations made in the previous year apply here. The lessons should be short and thoroughly mastered. Reviews should be frequent. Accent, emphasis, and inflection are prominent topics in this grade. The pupil should be encouraged to obtain a dictionary. From six to ten words should be selected for each recitation, looked up, the diacritical marks, and pronunciation learned. Learn meaning of words from their use in sentences in the text. Primitive and also derivative words should be selected. Memory gems should be learned. The class should write out the leading thoughts of a selection. The teacher should use care in these exercises.

Supplementary Reading.—Each pupil of this grade should read at home at least one book a month. The following are recommended both for home reading and for supplementary work in school: Stickney's Hans Andersen's Fairy Tales, First Series, (Ginn & Co.); Hawthorne's Wonder Book, (Houghton, Mifflin & Co.); Hawthorne's Tanglewood Tales, (Houghton, Mifflin & Co.); Six Stories from Arabian Nights, (Geo. A. Smith, Boston); Francillon's Gods and Heroes, (Ginn & Co.); Cook's Story of Ulysses, (Public School Publishing Co.); Kingsley's Water Babies, (Ginn & Co.); Eggleston's Stories of Great Americans for Little Americans, (American Book Co.); Baldwin's Old Stories of the East, (American Book Co.).

LANGUAGE.

To the Teacher.—Read what is said at the head of Language for third year, as the suggestions there given apply to the work of this year. It will be observed that the work of the third year is based principally on Æsop's Fables and that of the fourth year on the story of Robinson Crusoe. In his Language Lessons, recently published (Werner School Book Co.), and from which valuable suggestions for the work here have been obtained, Prof. Chas. DeGarmo says of this story:

"The story of Robinson Crusoe is more than a mere narrative of adventures. That which makes the book a classic is that it presents in concrete form the economic history of mankind. The struggle of the race from crude productions of barbarism up to the present, with its great power over nature, is here typically represented."

A synopsis of the part of the story to be used each month is inserted, but this is necessarily brief and omits many of the details of the story. There are many editions of Robinson Crusoe and the narratives vary in some particulars. There are several abridged school editions written in simple language. Every school library should possess one or more of





these, also one complete edition. The division of the story into months, as here given, is suggestive only. Persons having Mrs. McMurry's Teachers' Edition of Robinson Crusoe (Public School Publishing Co.), should not fail to read in the appendix "The Educational Value of Robinson Crusoe" by Prof. F. M. McMurry, and "Methods of Teaching Robinson Crusoe," by Prof. C. C. Van Liew.

Alternation.—Read what is said about this work alternating with that of the third year and take fourth year language during the school year of 1898-9, and each alternate year thereafter.

FIRST MONTH.

1. *Story.*—Robinson Crusoe begun.

Boyhood of Robinson Crusoe.—Lived in great city by sea. Parents kind—wanted Robinson to go to school to be a useful man. Boy lazy. Watches ships load and unload cargoes. Longs to sail to strange lands. Father wants his son to prepare to be a merchant—talk about bad habits. Asks mother to let go on one voyage—cannot consent to give up her only child. Meets a friend ready to sail and goes with him. *Voyage and Shipwreck.*—Big ship—sailing out of harbor—last view of home. Great ocean—strong wind—afraid—seasick. Terrible storm—waves break over ship. Ship strikes rock—leak. Small boat—all jump in—great wave upsets boat. Men drown. Robinson clings to rock—sees land—waves retreat—struggles to shore. *On Land.*—Wet—no change of clothes—hat washed away—hungry and thirsty—without food and drink. (Why not drink sea water?) Alone. Afraid of wild animals—no gun. Night—no place to sleep—thinks of birds—sleeps in tree. Morning—finds spring. Climbs hill—water all around—despair. Sees wrecked ship.

2. *Picture Lesson.*—Have each pupil make a drawing, even if ever so crude, to represent some incident in above story. Let each pupil select the incident that he prefers to picture. Afterward describe the picture drawn, also pictures illustrating this story found in books.

The following from the Stories of Ulysses are recommended for similar exercises: Ulysses Ploughing the Sand. The Wooden Horse. The Lotus Blossoms.

3. *Information Lessons.*—Interesting facts about products brought here from other lands. Compare sailing ships of time of Robinson Crusoe with ocean steamers of to-day.

4. *Sentence.*—Use the work of above exercises to study or review the sentence as outlined in first month's work of third year.

5. *Punctuation.*—Use of quotation marks; when a quotation should begin with a capital letter; use of single quotation marks.

6. *Stanza.*—What a stanza of poetry is; indentation of certain lines of some stanzas; begin every line of poetry with a capital letter.

7. *Word Study.*—Correct use of *stop* and *stay*.

SECOND MONTH.

1. *Story.*—Robinson Crusoe continued.

Goes to Ship.—Water shallow—wades and swims—climbs rope. Dog barks—both glad. Finds food. Makes raft—loads it—biscuit, flint, tinder, tools, guns, powder, shot, clothing. Starts with raft—dog follows—landing. Night—sleeps in tree—dog at foot. Goes to ship again. Gets nails, auger, grindstone, bedding, two cats. Need of shelter—puts up tent. Third trip finds pair of scissors, several knives, and a bag of gold. Money of no use. (Why?) Reaches shore—storm—wrecked ship washed away. Thankful to get so many useful things from ship. *New Home.*—Tent on low wet ground. Finds high level place at side of steep wall of rock—small cave in rock. Moves tent and goods—hard work. Protection needed—builds fence—sharpened stakes—ship cable. No gate—ladder. Tent leaks—builds cabin—poles, grass, leaves, mud, wood, sail. Makes cave larger—poor tools—hard work. Storm—lightning—fear of losing powder. Shakes dust out of grain sacks—fills with powder—puts in holes in rocks. Goes out with gun—sees goats—shoots goat—little kid left—sorry. *Record of Time.*—Puts up post—cuts date—cuts notch each day—seventh notch longer. Makes sundial—regular habits. Looks in box brought from ship—finds pens, paper, ink, Bible. Saving of ink. Writes on paper of "Evil," "Good," and is thankful.

2. *Picture Lesson.*—Have each pupil make a drawing to represent some

incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: The One-eyed Giant. Æolus and the Bag of Wind.

3. *Information Lessons.*—Interesting facts about timepieces; as, sundials, hour glasses, clocks, watches. Interesting facts about houses built by different nations and at various times in the world's history.

4. *Noun.*—Use the work of above exercises to study or review the noun as given in second month of third year.

5. *Punctuation.*—Use of the apostrophe in writing the possessive form of the noun.

6. *Possessives.*—Make a list of nouns from the reader which are the names of animate objects, write their possessive singular forms and use correctly in sentences; ditto, their possessive plurals; what about the use of the possessive form of names of inanimate objects?

7. *Word Study.*—Correct use of *funny*, *strange*, and *odd*.

THIRD MONTH.

1. *Story.*—Robinson Crusoe continued.

What Robinson Makes.—Chair, table, shelves. Making boards from trees. Lamp—tallow from goat—clay dish—wick. *Useful Plants.*—One day sees plants coming up near house—heads of barley—how came here—remembers shaking grain sacks. Later finds a few rice plants. Tends carefully saves every grain for seed. *Earthquake.*—Working in cave—dreadful noise—earth trembles—flees. Rocks fall in cave—hard work—long time. Thankful not killed. Tools dull—no one to turn grindstone invents treadle. *Robinson Sick.*—Out hunting—day warm—cold rain. Returns to cabin—chilly—fever—headache. Gets worse daily—intense thirst—no water in cabin. Thinks of parents—regrets conduct—sleeps—dreams of home. Grows worse—becomes insensible. Awakes—better—very weak. Dog rejoices—almost starved.

2. *Picture Lesson.*—Have each pupil make a drawing to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: Circe's Palace, The Sirens.

3. *Information Lessons.*—Interesting facts about rice, barley, and other food plants. Earthquakes.

4. *Verb.*—Use the work of the above exercises to study or review the verb as given in third month of third year.

5. *Punctuation.*—Use of comma when words are repeated for emphasis.

6. *Irregular Verbs.*—Make a list of about fifty of the most common irregular verbs and have pupils learn to spell their principal parts and use the same correctly in sentences.

7. *Word Study.*—Correct use of *lie* (to recline) and *lay*.

FOURTH MONTH.

1. *Story.*—Robinson Crusoe continued.

Explores Island.—In July goes up creek—meadows—thick woods—melons—grapes (raisins)—cocoa trees—oranges—lemons. Bower. Rainy season makes baskets. Longer trip on island—birds—flowers—parrot—turtles. Stake for landmark—lost in woods. Dog catches kid—tames—milk. *Garden.*—No plow—no spade—makes wooden spade—bough of tree for harrow. Two seasons—two harvests. Fences garden from wild goats and hares. Birds—scarecrow. Harvests grain with sword—hulls with hands. Needs mill—mortar—pestle—sieve. Need of jars and plates—makes from clay. Manner of baking bread. *Makes a Boat.*—Wants to go to other land—around island. Cuts large tree—boat large enough for twenty men—cannot get to water—time and labor lost. *Becomes a Tailor.*—Clothes old and ragged. How to get new clothes—money of no use. Skins of goats—jacket—leggings—cap—umbrella. *Makes Smaller Canoe.*—Large boat reminder to be wiser. Selects smaller tree and nearer water. Mast—sail. Starts around island. Ledge of rocks—sand bar—strong current drives boat away from island—fear—longs to be back at island home. Finally struggles to shore—opposite side of island—ties boat—old landmark—walks home. Parrot calls name. Thankful.





2. *Picture Lesson*.—Have each pupil make a drawing to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: *The Dangerous Channel*. *The Sun-God's Cattle*.

3. *Information Lessons*.—Production of raisins, cocoanuts, oranges, lemons.

4. *Adjective*.—Use the work of above exercises to study or review the adjective as given in fourth month of third year.

5. *Punctuation*.—Use of the dash studied by observing its use in the reader.

6. *Comparing Adjectives*.—Make a list of adjectives from the reader and learn spelling of their comparative and superlative forms and learn to use the same correctly in sentences.

7. *Word Study*.—Correct use of *each other* and *one another*.

FIFTH MONTH.

1. *Story*.—Robinson Crusoe continued.

Flocks.—Has one tame goat—wants more—makes traps—three kids. Makes pasture (Why small?). Large flock of goats—new pastures—plenty of meat and milk. Finally learns to make good butter and cheese. *Manner of Living*.—Robinson and family at table—dog—cats—Poll. Robinson's dress—high cap with flap—short coat—open—knee breeches—leggings. Belt around waist—hatchet. Belt over shoulder—pouches. Gun on shoulder—basket on back. Clumsy umbrella. *Alarm*.—Walks on shore one day—sees print of man's naked foot—frightened. Goes to castle—cannot sleep—remains in castle several days. Must get food—fear gradually wears off. *Prepares for Trouble*.—Another tight fence—holes for muskets plants willows in front of castle. Two ladders. How keep flocks from enemies—several pastures far apart—divides flock. Careful not to fire gun for a long time—does not chop nor drive nails. Smoke may be seen—makes charcoal.

2. *Picture Lesson*.—Have each pupil make a drawing to represent some incident in above story. Describe the picture drawn or some other picture.

The following stories are recommended for similar exercises: *Calypso and the Raft*. *The Sea-Bird's Gift*.

3. *Information Lessons*.—The manufacture of butter. Of cheese. Of charcoal, and uses of charcoal.

4. *Adverb*.—Use the work of above exercises to study or review the adverb as given for the fifth month of the third year.

5. *Punctuation*.—Use of the apostrophe in contractions.

6. *Contractions*.—What a contraction is; when proper to use a contraction; make a list of common contractions and learn to spell and use them.

7. *Word Study*.—Correct use of *plenty* and *plentiful*.

SIXTH MONTH.

1. *Story*.—Robinson Crusoe continued.

Discovers a Cave.—One day discovers a cave—enters—two shining eyes in darkness—loud groans—old goat. Gets lamp—explores cave—a place of safety—brings powder and several guns. *Savages on the Island*.—One morning after long time sees five canoes on shore—lies still in castle—finally climbs to top of hill. Looks through glass—sees about thirty men around a fire—two men dragged from a boat to be killed—one killed—other flees toward castle. Three savages follow—one goes back—Robinson takes two guns—rushes between savages and prisoner. Knocks one savage down with gun—other savage ready to shoot arrow—Robinson shoots him. Runaway savage frightened—finally goes to Robinson—throws himself down and puts Robinson's foot on his head—Robinson treats him kindly. *Servant*.—Takes poor savage to castle—feeds him—sleeps—description of servant. Names servant Friday—gives clothes—tent and bed. Friday from main land—several tribes of Indians—constantly at war—feast on prisoners.

2. *Picture Lesson*.—Have each pupil draw a picture to represent some incident in above story. Describe the picture drawn or some other picture.

The following story is recommended for similar exercises: Ulysses Among the Phæaces.

3. *Information Lessons*.—Interesting facts about Indians. Cannibals.

4. *Pronoun*.—Use the work of above exercises to study or review the pronoun as given in the sixth month of the third year.

5. *Punctuation*.—Correct use of a comma in a series.

6. *Combining Sentences*.—Have pupils combine sentences which will give a series in the subject; a series in the predicate; a series in the object; a series of adjectives; a series of adverbs; a series containing nouns and pronouns, and note correct order of arrangement; a series containing the different personal pronouns, and note order of arrangement to show preference.

7. *Word Study*.—Correct use of *may* and *can*, *might* and *could*.

SEVENTH MONTH.

1. *Story*.—Robinson Crusoe continued.

Robinson a Teacher.—Teaches Friday English—to shoot a gun—to plant and harvest grain—that there is one God. Friday milks goats—makes butter and cheese. *Prepare for a Journey*.—Friday like to go home if master will go. Tells about seventeen white men. Make new boat. Journey delayed by rainy season. *More Trouble*.—Rainy season over—getting ready for journey. One morning Friday starts to shore for turtle—sees canoes—runs back. Robinson and Friday get ready to fight savages. Go to top of hill—use spyglass—twenty-one savages—two prisoners—one a white man. Creep through woods—get near savages. Savages eating one prisoner. The battle—pursue savages—unbind white man. Another prisoner in boat—Friday's father—the happy meeting. Giving the poor prisoners food and drink—getting them to the castle. *Preparing for more Guests*.—Sixteen white men on mainland—Friday's father and white man to bring them to island. Raising more barley and rice—big harvest. The two men depart.

2. *Picture Lesson*.—Have each pupil draw a picture to represent some incident in above story. Describe the picture drawn or some other picture.

The following story is recommended for similar exercises: Penelope and Telemachus During Ulysses' Absence.

3. *Information Lessons*.—Description and habits of the turtle. The seasons in different parts of the world.

4. *Preposition*.—Use the work of above exercises to study or review the preposition as given in the seventh month of the third year.

5. *Punctuation*.—Use of the parenthesis studied by observing its use in the reader.

6. *Letter Writing*.—Have pupils copy one or more model letters, taking notice of the punctuation, capitals, the margin, the paragraphs, and the relative position of the parts of the letter.

7. *Word Study*.—Correct use of *between* and *among*.

EIGHTH MONTH.

1. *Story*.—Robinson Crusoe concluded.

Another Surprise.—A few days later Friday sees ship. Robinson looks through glass. English ship—joyful sight! Go down to boat—captain surprised. Robinson tells of his adventures. Many years longing to see home and parents. Captain offers to take them to England. Happy thought of seeing father and mother again. Robinson offers to let Friday remain and live with Spaniards and his father, or take boat and go home. Prefers to go with Robinson. Letter left telling Spaniards about departure to England—to send word to their countrymen—leaves guns and ammunition for them. Robinson takes a few relics and bag of gold. Bids farewell to island home—had lived there twenty-eight years. *Home Again*.—The voyage. Everything strange to Friday. Robinson hurries home to see parents—meets a man—inquires about parents—father living—mother died of sorrow over loss of boy. Meeting father—former acquaintances. Quiet useful life. Ever thankful to God for keeping him through many dangers.

2. *Picture Lesson*.—Have each pupil draw a picture to represent some incident in above story. Describe the picture drawn or some other picture.



The first of these was the discovery of gold in California in 1848. This discovery led to a great influx of people to California, and the state became a great center of population. The second was the discovery of gold in Colorado in 1859. This discovery led to a great influx of people to Colorado, and the state became a great center of population. The third was the discovery of gold in Nevada in 1859. This discovery led to a great influx of people to Nevada, and the state became a great center of population. The fourth was the discovery of gold in Idaho in 1860. This discovery led to a great influx of people to Idaho, and the state became a great center of population. The fifth was the discovery of gold in Montana in 1862. This discovery led to a great influx of people to Montana, and the state became a great center of population. The sixth was the discovery of gold in Wyoming in 1869. This discovery led to a great influx of people to Wyoming, and the state became a great center of population. The seventh was the discovery of gold in Utah in 1871. This discovery led to a great influx of people to Utah, and the state became a great center of population. The eighth was the discovery of gold in Arizona in 1876. This discovery led to a great influx of people to Arizona, and the state became a great center of population. The ninth was the discovery of gold in New Mexico in 1878. This discovery led to a great influx of people to New Mexico, and the state became a great center of population. The tenth was the discovery of gold in Texas in 1880. This discovery led to a great influx of people to Texas, and the state became a great center of population.

The following story is recommended for similar exercises: Ulysses at Home Again.

3. *Information Lessons.*—The production of powder. How lead is obtained. The manufacture of shot.

4. *Conjunction and Interjection.*—Use the work of above exercises to study or review the conjunction and the interjection as given in the eighth month of the third year.

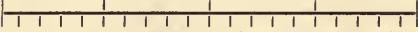
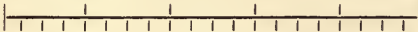
5. *Punctuation.*—Use of the colon studied by observing its use in the reader.

6. *Letter Writing.*—The four parts of a letter—the heading, the introduction, the body, the conclusion; how to fold a letter; how to address an envelope; where to place the stamp on the envelope.

7. *Word Study.*—Correct use of *expect*, *suspect*, *suppose*, and *presume*.

ARITHMETIC.

FIRST MONTH.

Teach that .1 is the decimal notation for $\frac{1}{10}$. Find .1 of 30, .3 of 80, .1 of 13, .7 of 12, etc. Add mixed numbers involving tenths. Show that 1.4 may be read either as a mixed number or an improper fraction. Multiply tenths by integers and integers by tenths. Partition of tenths; as, $\frac{1}{10}$ of 4.2, or $4.2 \div 6$. Division of tenths by tenths; as, $63.6 \div 2$. Show that integers must be changed to tenths before division in such problems as $46 \div 2$. Continue such problems through the year. Teach tables of 11's and 12's and reduce feet to inches. Short division—divisor 2, 3, 4, 5. Numerous concrete problems analyzed. Distinguish carefully between *partition* and *measurement* and use appropriate form of analysis for each. Establish a type-problem of each in which the work is performed with objects and refer all others to the types; as: At what rate per hour can I travel twenty miles in four hours?  for partition. In how many hours can I travel twenty miles at four miles per hour?  for measurement.

Utilize for drill every problem involving these and other processes as they arise in connection with other studies.

SECOND MONTH.

Draw a yard-square and divide it into foot-squares. Divide a foot-square into inch-squares. Teach table. Measure school-room floor. Pupils draw on blackboard—scale one inch to the foot, or on tablet—scale one-fourth inch to the foot. Calculate area. Measure and calculate many areas. Teach dozen and gross. Teach division by 6, 7, 8. Multiplication by 20, 30, 40, 50, 60, 70, etc. Multiplication by 22, 33, 44, 55, 66, etc.

THIRD MONTH.

Make plan of school yard on some suitable scale; locate accurately building, trees, walks. Calculate area of yard and area covered by walks and building.

Division by 9, 10, 11, 12. Multiplication by any two-place multiplier. Show by paper-folding, or by divided lines, that $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10} = \frac{6}{12}$, etc. Write series of equivalent fractions for $\frac{2}{3}$, $\frac{1}{2}$, $\frac{3}{4}$ and other familiar

fractions. Show that $\frac{2}{3}$ and $\frac{4}{6}$ can be changed to equivalents having the same unit. Add $\frac{1}{4}$ and $\frac{1}{8}$, $\frac{1}{2}$ and $\frac{1}{4}$. Show that in changing fractions to *smaller* units, both terms are multiplied by the same number.

FOURTH MONTH.

Teach method of finding width of rectangle by dividing whole number of unit-squares by number of unit-squares along the base. Teach *form* of long division, using divisors less than 13. Write quotient over dividend,

335

thus: $7 \overline{)2345}$. Teach reduction of fractions to equivalents of larger

21

fractional units by reversing the series of last month. Deduce principle. Teach reduction of compound numbers—gal. qt. pt.—yd. ft. in.—to lower denominations. Teach addition and subtraction of compound numbers.

FIFTH MONTH.

Long division by 13, 14, 15, 16, pupil *making* table of 13's, etc., as needed for reference. Teach how to find *what part* one number is of another. Show how to find averages and calculate average age of class, average weight, average distance the pupils come to school, etc. Teach decimal hundredths and the various operations outlined in first month for tenths.

SIXTH MONTH.

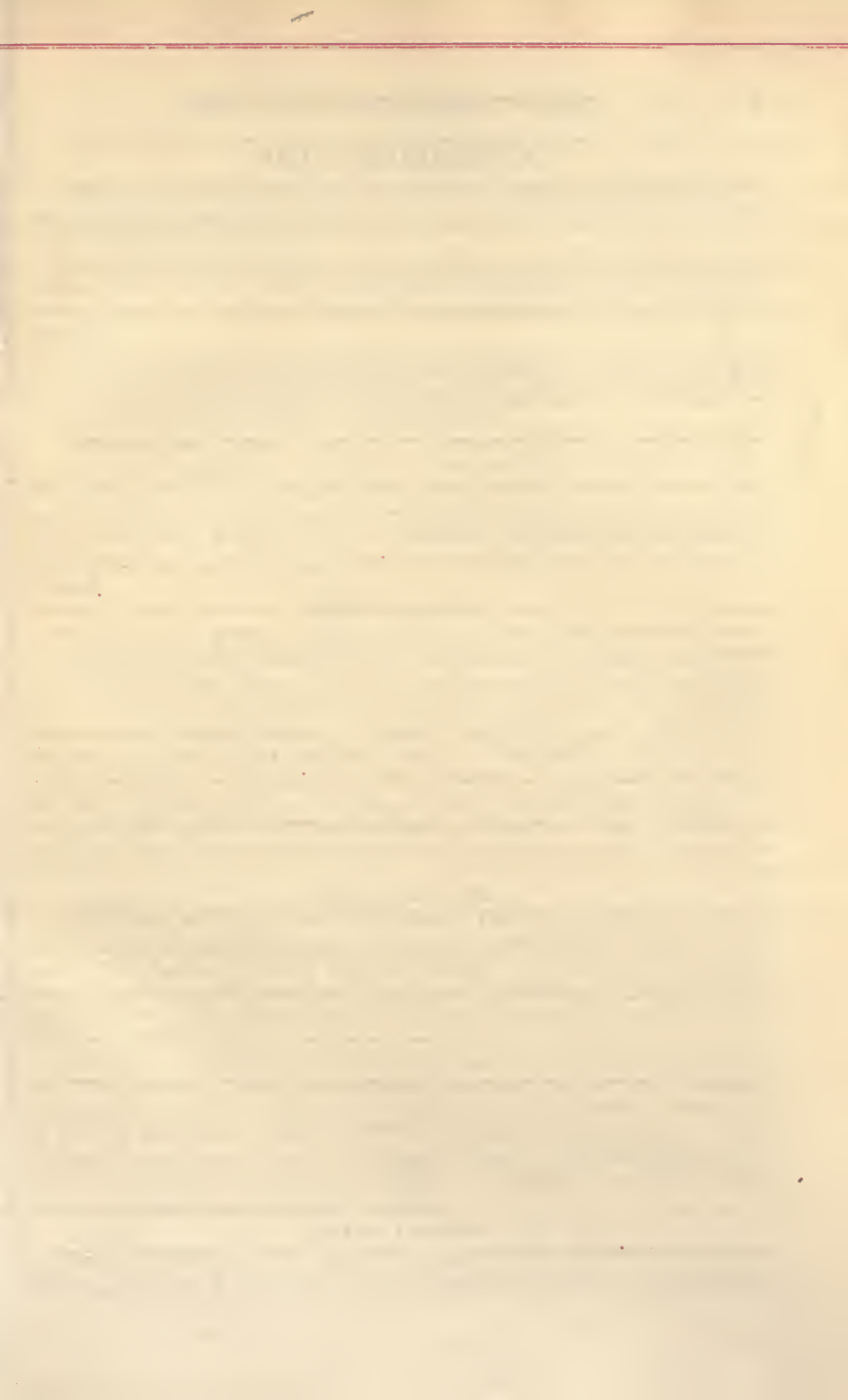
Divide by 20, 30, 40, 50, 60, 21, 31, 41, 51, etc., without table of reference. Give half of the month to long division. Multiplication of compound numbers studied. Teach how to find a number when a specified part of it is known; as, 15 is $\frac{3}{8}$ of what number? Provide about 50 inch-cubes and have the children build two-inch cubes, three-inch cubes, and various rectangular solids. Have them note the *area* of the faces and the volume of the solids. Teach method of calculating volume by noting units in a row, rows in a layer, and layers in the solid.

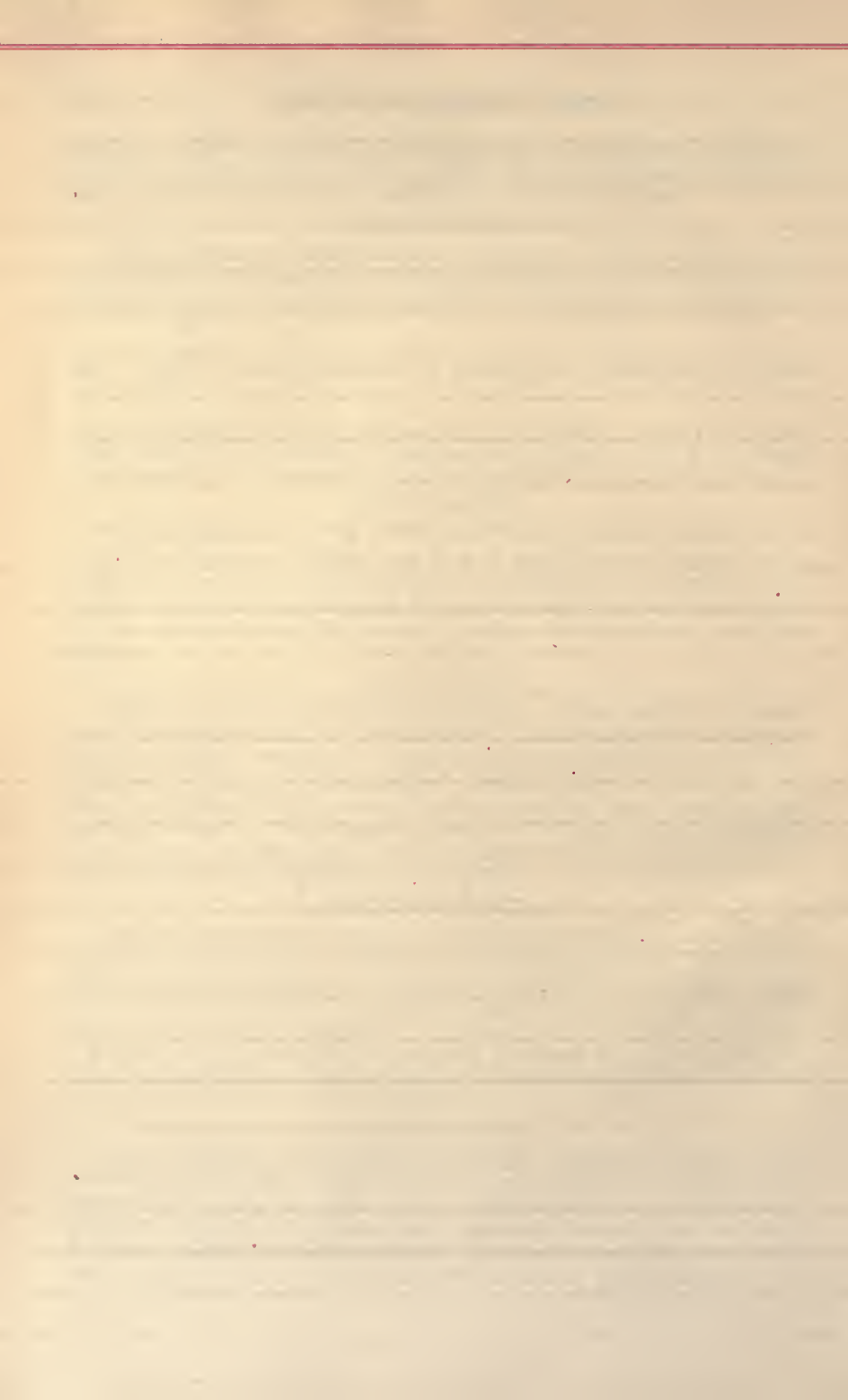
SEVENTH MONTH.

Division by two-place divisors. See that the meaning of each problem in division is clearly seen. Partition of compound numbers. Give problems in proportion; such as: "If 8 pounds of sugar cost 50 cents, what is the cost of 12 pounds?" *8 pounds is the same part of 12 pounds as 50 cents is of the required number. 8 pounds is $\frac{2}{3}$ of 12 pounds; 50 cents is $\frac{2}{3}$ of 75 cents.* Teach how to find any fractional part of any integer. Teach how to make the smaller number the multiplier in such problems as, "Cost of 360 lb. of lard at $7\frac{1}{2}$ cents?"

EIGHTH MONTH.

Long division by any three-place divisors. Measure rectangles with fractional dimensions. Divide fractions by fractions, reducing them to equivalents having the same unit. Teach definitions of subtraction, minuend, multiplicand, product, etc. Note that division is the process of dividing a number into equal numbers. In *measurement* the size of these equal numbers is given; in *partition*, the number of equal numbers.





ORAL GEOGRAPHY.

Objects.—The objects are to enable the pupil to make and read a map; to give primary ideas concerning the earth, and to know what the study of geography really is.

The plan is to teach time, direction, distance, art of measuring, use of definite scale; to draw maps, study climate, vegetation, animals, minerals, occupations, local exports, imports, and government of home and neighborhood.

REMARKS.—In giving oral instruction we should bear in mind that the child acquires a real knowledge of things through his own observation. Keep in mind, then, that elementary instruction is upon real objects, and that your inquiries must appeal to the senses of the pupil for answers. Wherever practicable bring the object before the class. If not so, try to get pictures for your illustrations.

Interest the Pupil.—Endeavor to arouse the pupil's curiosity and cultivate his imagination by the use of pictures and by oral descriptions. Find pictures of a hill; talk of its foot, top (summit), sides, slopes, etc.; speak of top covered with snow, very high. Secure definition of a hill and a mountain. Work up, in the same way, the name and definition of each of the natural divisions. Teach the symbol for each as its name is learned.

FIRST MONTH.

The Idea of Time.—Days are long in summer and short in winter. Winter evenings long, summer short. Day and night together, a natural day, or twenty-four hours. The civil day begins and closes at midnight. Number of hours in a school day. Number of times the clock strikes. When school opened to-day. When it will close. Class be silent a minute. Length of class exercise. Time to walk home. Minutes in an hour. Seconds in a minute, etc. Use of hands of clock, and how to tell the time. Names of days of week; the first and last days; number of weeks in the month; since school began; in a year; from birthday to birthday; from Christmas to Christmas. Months in a year. Time table learned.

SECOND MONTH.

The Idea of Place and Direction.—The terms right, left, front, back. Point in these directions. Name numerous objects in these directions. Teacher name objects and class locate. One pupil names objects to be located by the class, and *vice versa*. Point to top, bottom, right side, left side, and center of a map. Extend to location of familiar objects in the neighborhood.

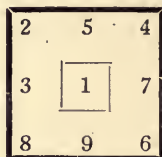
Pupils face the rising sun; the setting sun; at noon; sunrise and sunset. Face the east, west, and different points of the compass. Exhibit compass if possible. Locate numerous objects in the room. Directions of lines in the room; cracks, desks, etc. Objects near the house. Walks of pupils to and from school. Direction of winds. How does the sun get back to the east every twenty-four hours? Use globe to illustrate day and night. Let pupils use globe and explain.

THIRD MONTH.

Idea of Distance.—Compare the length of objects with one another. Supply pupils with foot rules. Guess length of objects, then measure

them. Extend this practice to the yard, when inside of room is exhausted. Pupils guess distances, then measure them. Select objects half mile away, a mile away. Distance to school or home. Combine distance, time, and direction by the use of imaginary or real journeys. To illustrate: "The church is about a mile due east, and it will take about twenty minutes to walk to it."

Idea of Map.—Use north board. Top, north; bottom, south; right hand, east; left hand, west. Draw this figure:



Form many questions such as: Direction of 3 from 1; direction of boundary lines, etc. Require pupils to form questions. Draw map of school room upon definite scale, as one fourth inch to a foot. Pupils compare map with room; note boundaries and their directions. Draw map of school ground on a scale of one inch, or one half inch to the rod; locate house, pump, etc.; note direction and length of boundaries. Recite from map until all understand it.

FOURTH MONTH.

Map Drawing.—Draw map of school grounds with adjoining fields on reduced scale. Pupils draw maps of home farms, locating pastureland, cornfields, brooks, fences, etc. Take pupils on imaginary journeys over the school district, locating roads, brooks, woods, farmhouses, and the schoolhouse. Write a list of objects to be located. Pupils draw map of district. Write a list of objects on margin of map, referring by figures 1, 2, 3, etc., to the objects represented on map. Let scale be an inch to the mile. Work up the township map in the same way. Locate all schoolhouses, churches, and towns.

FIFTH MONTH.

Climate.—Teach climate as the pupils have experienced it; as to temperature—hot, cold, moderate; as to moisture—dry, wet, damp; as to diseases—healthful and unhealthful. Teach directions to travel to find changes in climate. Teach the useful vegetation of the neighborhood, pupils making lists of articles raised on farms. Tell what is done with them. Those sent away are called *exports*. Make lists of vegetable productions brought in for home use; as, sugar, coffee, cinnamon, rubber, camphor, etc., *imports*. Follow the same plan with animals and minerals. Be sure to study home exports and imports.

SIXTH MONTH.

Occupations.—Pupils name and write as long a list as possible of the different trades and kinds of business. After several lessons spent in preparing and talking about them, begin to classify. Put everything that is done on farms under *agriculture*; all buying, selling and transporting





under *commerce*; all in which things are made under *manufacturing*. Teacher speak of *lumbering, mining, fishing, hunting*, etc. Clergymen, lawyers, physicians, authors, journalists, teachers, etc., belong to the *professions*. Call attention to the different conditions of society and peoples, as *savages, partly civilized, and civilized*.

Government.—Who governs the school when in session? Who hires the teachers, buys coal, and cares for the house? Who governs the family? Who governs the State? Who makes the laws? Who governs the United States? Study purpose of government, punishments, etc. Lead pupils to see necessity for good government, and that the best government is among civilized people.

SEVENTH MONTH.

County.—Draw a map of the county, locating railroads, towns, and rivers. Indicate adjoining counties and state shortest distances to them. The county seat; why so called? The county officers and some of their duties.

NOTE.—Large sheets of manilla wrapping paper answer well for map drawing.

EIGHTH MONTH.

Review.—Review the work of the year. Deduce this definition—*Geography is a study of the earth and what is on it.*

FIFTH YEAR.

TEXT-BOOKS—Fourth Reader, Elementary Grammar, Elementary Arithmetic, Elementary Geography, Physiology.

READING.—Fourth reader.

SPELLING.—Spelling, word study.

GRAMMAR.—Elementary work.

ARITHMETIC.—Measures, common fractions, elementary percentage.

WRITING.—See sixth year.

PHYSIOLOGY.—Elementary work.

GEOGRAPHY.—Elementary geography.

SCIENCE.—See "Observation Work."

GENERAL EXERCISES.—Music, Drawing, Morals and Manners.

READING.

Complete about sixty per cent of fourth reader. The principal object before the learner in this grade is to understand the language and then to present the thought clearly and distinctly to the hearer. A knowledge of the meaning of words is of great importance, and should be learned from the context.

The meaning and rendering of a phrase or sentence should be considered, as well as the meaning of the words. Proper articulation should be cultivated, and correct accent, emphasis, and inflection should be secured. The reading should be done in natural tones. When a selection is read aloud, it is for the purpose of fully conveying the meaning to the hearer. Extraordinary elocutionary efforts, adding nothing to the presentation of thought, are to be shunned. The full explanation and analysis of the lesson will require study on the part of the teacher. If he has not studied the lesson carefully, the class will have poor instruction. All random efforts are futile. If the teacher awakens an interest in the reading lesson,

a point of prime importance, *he* will be interested, will plan his work carefully, and study diligently, in order to carry the scheme he has framed to successful completion. The student-teacher is in demand.

Supplementary Reading.—The following books are recommended for this grade: Longfellow's *Hiawatha*, I and II, (Houghton, Mifflin & Co.); Ruskin's *King of the Golden River*, (Ginn & Co.); *Lays of Ancient Rome*, (Houghton, Mifflin & Co.); Montgomery's *Bunyan's Pilgrim's Progress*, (Ginn & Co.); *The Voyage to Lilliput and Brobdingnag*, (Houghton, Mifflin & Co.); Morley's *Song of Life*, (Ginn & Co.); *Black Beauty*, (Public School Publishing Co.); *Stories of Our Country*, (American Book Co.); *Heart of Oak Books No. III*, (D. C. Heath & Co.).

SPELLING.

To the Teacher.—There is a great difference of opinion as to how spelling should be taught. Some teachers would have pupils use a spelling-book, others would teach spelling incidentally with other subjects; some would have all the spelling recited orally, others would have it all written. The value of any or all of these methods depends very much on the ability of the teacher. That no teacher will lead his pupils to get more out of a subject than he sees in that subject is as true of spelling as of other branches.

One teacher may take a carefully prepared spelling-book and so teach from it that it will be a source of thought and growth to pupils, as well as fixing the habit of correct spelling. Another teacher may take the same book and so use it that the pupils will waste a large amount of time in careless, deadening drills upon words that to them are meaningless, or which they already know. So in teaching spelling incidentally, one teacher may see that pupils learn to spell all new words as they need them, while an imitator of this method may have pupils spell some words but pass over others equally important. The following thoughts are offered for the consideration of teachers:

1. Language has two forms, oral and written. In both there should be training.

2. The oral word appeals to the ear—(sound) *pronunciation*.

3. The written word appeals to the eye—(form) *letters in proper order*.

4. Correct pronunciation is as important as correct spelling, and perhaps even more so for the majority of people, who talk more than they write.

5. Neither pronunciation nor spelling should be neglected. Both should be taught, and whatever method or methods may be used, the teacher should see that the pupils learn both to pronounce and to spell correctly all the words they use. No lesson should be assigned for study in the primary or intermediate grades unless the teacher knows that pupils can pronounce all the words correctly from the open book. Why should a pupil con the letters of words he is unable to pronounce? How can he pronounce unless he is taught? Advanced grades may need this work also.

6. The method or methods used should be such that pupils will not





only learn words placed before them for study, but will lead them to **form** the habit of looking carefully at new words as they meet them, and **fixing** their form definitely in mind. It is said that one of the great educational values that comes from the study of arithmetic is due to the fact that it is an exact science, and if properly taught, fixes the habit of exactness which is so valuable in life. In teaching spelling, pupils should be trained in the "habit of exactness."

7. Teachers should remember that it is impossible to outline in full **at** this place a complete course of spelling. A few exercises are suggested and definite work given for each month, but this represents the minimum of what should be done, even in the lines indicated.

Alternation.—The spelling of the fifth and sixth years as given in this Course is arranged to alternate, so that there need be but one class in spelling in the intermediate division. As this alternation began with the Course of 1894, the work of the sixth year should be studied during 1897-98, and that of the fifth year during 1898-99, and so continue to alternate.

FIRST MONTH.

1. See that pupils are able to pronounce and spell all the technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, and physiology.

2. Study various sounds represented by *a*, and the diacritical marks used to indicate these sounds.

3. Pronunciation, spelling, and correct use of the following words: air, ere, e'er, heir; all, awl; altar, alter; arc, ark; ascent, assent; ate, ait, eight; auger, augur; aught, ought.

4. Select, define, and use in sentences, a list of words containing the suffix *dom*. The suffix *hood*. Observe change of *y* to *i* in such words as hardihood.

SECOND MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, and physiology.

2. Sounds represented by *e*, with diacritical marks used to represent same.

3. Pronunciation, spelling, and correct use of the following words: bad, bade; bail, bale; ball, bawl; base, bass; bell, belle; berry, bury; bin, been; bite, bight.

4. Study words containing the suffix *ness*. The suffix *ship*. Notice change of *y* to *i* in laziness, holiness, etc.

THIRD MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, and physiology.

2. Sounds represented by *i*, with diacritical marks used to represent same.

3. Pronunciation, spelling, and correct use of the following words: blue, blew; bough, bow; boll, bowl; bole; brute, bruit; burrow, borough, burro; cannon, canon; canvas, canvass; cere, sear, seer, sere.

4. Study words containing the suffix *y*. Notice that *e* is dropped from such words as easy, icy, stony, etc.; also that the final consonant is doubled in such words as sunny, muddy, foggy, etc.

FOURTH MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, and physiology.
2. Sounds represented by *o*, with diacritical marks used to represent same.
3. Pronunciation, spelling, and correct use of the following words: clause, claws; cord, chord; core, corps; cousin, cozen; crews, cruise; dear, deer; die, dye; do, doe, dough.
4. Study words containing the suffix *ry*. The suffix *en*. Notice whether the *e* in *en* is sounded or silent in the words studied.

FIFTH MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, and physiology.
2. Sounds represented by *u*, with diacritical marks to represent same. Careful drill on pronunciation of words containing "long u."
3. Pronunciation, spelling, and correct use of the following words: draft, draught; dire, dyer; dying, dyeing; earn, urn; ewe, yew, you; eyelet, islet; fare, fair; fate, fete.
4. Study words containing the suffixes *kin*, *ling*, and *let*.

SIXTH MONTH.

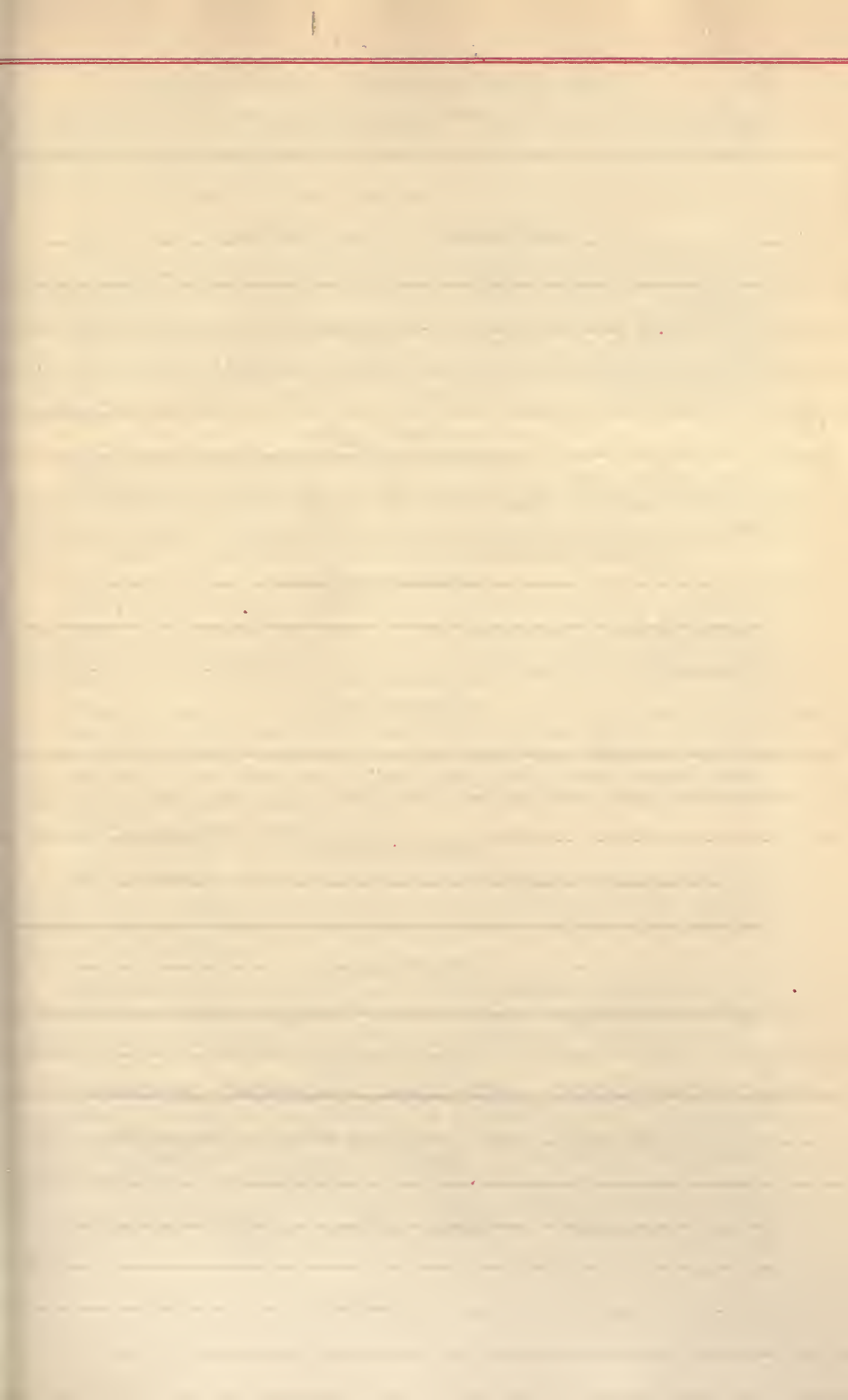
1. Pronounce, and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, and physiology.
2. Sounds represented by *y*, with diacritical marks to indicate same.
3. Pronunciation, spelling, and correct use of the following words: flour, flower; flue, flew; fore, four; forth, fourth; grate, great; hale, hail; heal, heel; hear, here.
4. Study words containing the suffix *able* or *ible*. Make a list of all the words with these endings and practice on them until pupils do not make mistakes in spelling them.

SEVENTH MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, and physiology.
2. Sounds represented by *c*, *g*, and *n*, with diacritical marks to indicate same.
3. Pronunciation, spelling, and correct use of the following words: herd, heard; hew, hue; hire, higher; hoard, horde; hole, whole; holy, wholly; hose, hoes; kernel, colonel.
4. Study words containing the suffix *ful*. The suffix *less*. Notice the change of *y* to *i* in such words as penniless, beautiful, etc.

EIGHTH MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, and physiology.
2. Sounds represented by *s*, *x*, *ch*, and *th*, with diacritical marks to represent same.
3. Pronunciation, spelling, and correct use of the following words: key, quay; led, lead; leaf, lief; leak, leek; levee, levy; lie, lye; links, lynx; lo, low.





4. Study words containing the suffix *ly*. The suffix *ment*. Notice the change of *y* to *i*, in such words as happily, sleepily, etc.; also the omission of *e* in gently, only, etc.

ELEMENTARY GRAMMAR.

NOTE.—The pupils of the fifth and sixth years of the course may be classed together. This year's work need not be taught each year, but may alternate with sixth year's grammar. The teacher should be on the alert to gather up the words and forms, which, used incorrectly, account for the common errors in language. Use some good text-book on grammar and teach pupils to use it. Use the reading lessons or other good selections to supply material for illustrating the principles of grammar. Require pupils to read text-book in class as a reader, especially first lessons on new and difficult topics. They should read and explain all words and sentences used as illustrations. They should furnish similar examples from reading lessons. Do not be content with the little examples given in the text-book. Go to the living language, where words mean something. Cause the pupils to see all forms of words and their uses by the best speakers and writers.

FIRST MONTH.

Elementary text-book in grammar introduced.

Definitions.—Definitions of terms as needed. The sentence as a whole; subject, predicate, object. The noun, kinds of nouns; singular and plural forms. Practice on sentences in readers till the facts of grammar are seen to be realities in the spoken and written language.

SECOND MONTH.

The Verb.—Transitive, intransitive, copula. Elements of a sentence. Drill upon forms of irregular verbs. More mistakes are made in common speech in the irregular verbs than in all other parts of speech. The teacher who trains the class to use verbs correctly has done a great work.

THIRD MONTH.

The Adjective.—Descriptive and definitive; the articles. To illustrate, cause the pupil to notice color, size, and form; qualities, such as smooth, rough, hard, soft, heavy, light, long, short, broad, narrow, round, etc. Make easy comparisons. Proper use of adjectives after the verbs *look, seem, feel, appear, smell, taste*.

FOURTH MONTH.

The Pronoun.—Personal, relative, interrogative; various forms of each used in sentences; study more minutely these forms when used as subject, object, possessive, and after the verb "to be." Compositions upon simple subjects.

FIFTH MONTH.

Adverbs.—Drill on sentences in which adverbs modify verbs; in which adverbs modify adjectives; in which adverbs modify adverbs. Position of adverbs in sentences. Use of contractions; as, *don't, can't*, etc.

SIXTH MONTH.

Preposition, Conjunction, Interjection.—Develop the idea of "relation" as used in the definition of a preposition; as, "The boy sat *by, in, upon, under, or against* the house." Most pupils have difficulty in understanding what is meant by relation. In most cases, this relation is one of position. To make this clear, select prepositions from reader; state word following and preceding it. Commit list of prepositions. Use of conjunctions to combine words and statements. Conjunctions used in pairs.

SEVENTH MONTH.

Analysis.—Analysis of simple sentences. Distinguish between analyzing and diagraming a sentence. Definition of phrase. Use and position of phrases in sentences.

EIGHTH MONTH.

Compound Sentences.—Show that the subject may be compound; the predicate may be compound; the object may be compound. Analysis of compound sentences. Define clause. Complex sentences. Drill upon changing simple to complex and compound sentences. Find examples in reader of all. Review the work of this year.

ARITHMETIC.

FIRST MONTH.

Cubic Measure.—Calculate volume of rooms, boxes, etc.

Simple Numbers.—Teach *factor* as an exact divisor of a number, *prime*, *composite*, *odd*, *even*. Prime factors of numbers to 30.

Common Fractions.—Reduce mixed numbers to fractions, and fractions to mixed numbers.

Decimals.—Teach thousandths, and solve the various sorts of problems into which thousandths may enter. In multiplication see that the decimal point is written in each partial product. In partition, write the point in the quotient when it is reached in the dividend.

Percentage.—Teach that per cent means hundredths, that $\frac{1}{2} = 50\%$, $\frac{1}{3} = 33\frac{1}{3}\%$, $\frac{1}{4} = 25\%$, $\frac{1}{5} = 20\%$. Give many *simple* problems in all three cases involving the above rates only; as 50 % of 12 bu. = — bu. \$6 is — % of \$18. 2 feet is 25 % of — feet.

SECOND MONTH.

Keep up practice in decimals. Make merchants' bills from time to time. Insist on neat work. Teach the ton and the weight of a bushel of corn, oats, wheat, coal. Give comparative problems, and problems involving the decimal parts of the ton and hundred-weight. Problems in excavation at customary price per cubic yard. Prime factors to 40. Reduce fractions to lowest terms (largest units), and introduce the term *common factor*. Teach method of finding highest common factor. Teach $16\frac{2}{3}\%$, $14\frac{2}{3}\%$, $12\frac{1}{2}\%$, 10%, $8\frac{1}{3}\%$, as equivalents of $\frac{1}{6}$, $\frac{1}{7}$, $\frac{1}{8}$, $\frac{1}{10}$, $\frac{1}{12}$.

THIRD MONTH.

Teach wood measure—the cord and cord foot. Prime factors to 60. Addition of fractions. Add $\frac{1}{10}$ and $\frac{1}{12}$. Show the need of some method for finding the fractional unit to which tenths and twelfths may be reduced. Show that the denominator must be a number divisible by both 10 and 12. Introduce the terms *multiple*, and *common multiple*, and teach method of finding same. Teach paper measure. Teach 75 %, $66\frac{2}{3}\%$, 40 %, 60 %, 80 %, and use in problems as heretofore.

In adding mixed numbers do not reduce to improper fractions.

FOURTH MONTH.

Prime factors to 70. Develop the principle that we may multiply a fraction either by multiplying the number of fractional units; as, $\frac{5}{7} \times 4 = \frac{20}{7}$,

The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the problem is one of the most important and most difficult in the history of science. The second part of the paper is devoted to a discussion of the various theories of the origin of life. It is shown that the most plausible theory is that of the origin of life from non-living matter. The third part of the paper is devoted to a discussion of the various theories of the origin of man. It is shown that the most plausible theory is that of the origin of man from non-living matter. The fourth part of the paper is devoted to a discussion of the various theories of the origin of the human mind. It is shown that the most plausible theory is that of the origin of the human mind from non-living matter. The fifth part of the paper is devoted to a discussion of the various theories of the origin of the human soul. It is shown that the most plausible theory is that of the origin of the human soul from non-living matter. The sixth part of the paper is devoted to a discussion of the various theories of the origin of the human body. It is shown that the most plausible theory is that of the origin of the human body from non-living matter. The seventh part of the paper is devoted to a discussion of the various theories of the origin of the human spirit. It is shown that the most plausible theory is that of the origin of the human spirit from non-living matter. The eighth part of the paper is devoted to a discussion of the various theories of the origin of the human intellect. It is shown that the most plausible theory is that of the origin of the human intellect from non-living matter. The ninth part of the paper is devoted to a discussion of the various theories of the origin of the human will. It is shown that the most plausible theory is that of the origin of the human will from non-living matter. The tenth part of the paper is devoted to a discussion of the various theories of the origin of the human emotions. It is shown that the most plausible theory is that of the origin of the human emotions from non-living matter. The eleventh part of the paper is devoted to a discussion of the various theories of the origin of the human senses. It is shown that the most plausible theory is that of the origin of the human senses from non-living matter. The twelfth part of the paper is devoted to a discussion of the various theories of the origin of the human faculties. It is shown that the most plausible theory is that of the origin of the human faculties from non-living matter. The thirteenth part of the paper is devoted to a discussion of the various theories of the origin of the human powers. It is shown that the most plausible theory is that of the origin of the human powers from non-living matter. The fourteenth part of the paper is devoted to a discussion of the various theories of the origin of the human qualities. It is shown that the most plausible theory is that of the origin of the human qualities from non-living matter. The fifteenth part of the paper is devoted to a discussion of the various theories of the origin of the human attributes. It is shown that the most plausible theory is that of the origin of the human attributes from non-living matter. The sixteenth part of the paper is devoted to a discussion of the various theories of the origin of the human characteristics. It is shown that the most plausible theory is that of the origin of the human characteristics from non-living matter. The seventeenth part of the paper is devoted to a discussion of the various theories of the origin of the human traits. It is shown that the most plausible theory is that of the origin of the human traits from non-living matter. The eighteenth part of the paper is devoted to a discussion of the various theories of the origin of the human features. It is shown that the most plausible theory is that of the origin of the human features from non-living matter. The nineteenth part of the paper is devoted to a discussion of the various theories of the origin of the human qualities. It is shown that the most plausible theory is that of the origin of the human qualities from non-living matter. The twentieth part of the paper is devoted to a discussion of the various theories of the origin of the human attributes. It is shown that the most plausible theory is that of the origin of the human attributes from non-living matter.



or by multiplying the size of the fractional units; as, $\frac{5}{8} \times 4 = \frac{5}{2}$. Multiplication of a fraction by a fraction. Lay off a rod on the schoolroom floor. Teach its relation to the mile, and teach length of mile in feet. Solve problems using rates 1%, 2%, 3%, 4%, etc., in all three cases of percentage. See that pupils always say "per cent of —."

FIFTH MONTH.

Have pupils work out average daily temperature from school weather record. Teach prime factors to 80. Draw a square rod—scale 1 inch to the yard—and note the number of yard-squares, the two sets of half-squares, and the quarter-square. Multiply $5\frac{1}{2}$ by $5\frac{1}{2}$ and show what part of the square each part of the product represents. Teach the acre, its relation to the square rod and square mile. Note dimensions of 40-acre and 20-acre fields near the schoolhouse.

Problems in Profit and Loss—all cases.

SIXTH MONTH.

Teach number of cubic inches in gallon and bushel and calculate capacity of bins, cribs, and wagon-tanks. Prime factors to 90. Find what part fractional numbers are of other fractional numbers (ratio). Problems in fencing and flooring—begin with schoolyard and schoolroom. Express $\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, etc., as tenths, and hundredths. Problems in commission drawn from the environment of the pupils—land sales, lawyers' collections, etc.

SEVENTH MONTH.

Prime factors of numbers to 100. Simple problems in shingling, papering, painting, plastering. Express sixths, eighths, twelfths, as hundredths and thousandths. Partition of fractions. Show that a fraction may be divided into three equal parts either by dividing the number of fractional units $\frac{9}{10} \div 3 = \frac{3}{10}$, or by dividing the size of the fractional units $\frac{9}{8} \div 2 = \frac{9}{12}$. Teach simple interest.

EIGHTH MONTH.

Division of fractions by fractions by reducing to a common denominator. Simple problems in carpeting. Teach that if *than* occurs in a percentage problem the following word names the base. Solve problems in "per cent more than," and "per cent less than."

PHYSIOLOGY.—Fifth and Sixth Years.

FIRST MONTH.

Bones.—Scientific names of principal bones. Hygiene, nourishment, growth, coverings, and uses of bones; joints and cartilages.

SECOND MONTH.

Digestion and Absorption.—Trace food from mouth to blood, naming and describing to some extent, the more important organs and fluids in the course.

THIRD MONTH.

Lungs.—Describe structure of lungs. Care of lungs and throat. Teach how blood is purified in lungs. Color of pure and impure blood.

FOURTH MONTH.

Circulation.—Structure of heart. Name and locate the chambers and valves. Examine heart of some animal before class. Effects of alcohol and tobacco on heart and circulation.

FIFTH MONTH.

Digestion.—Go more into detail, naming and describing the different organs which come in contact with the food. Experiments of Dr. Beaumont on action of the stomach. Story of Alexis St. Martin.

SIXTH MONTH.

Nervous System.—General outline of. Effects of alcohol and tobacco on nervous system. Impress fact that it is difficult to restore nervous system after it is once impaired. Necessity for early retiring.

SEVENTH MONTH.

Special Senses.—Simple explanation of structure of eye and ear. Care of eyes. Avoid reading, (*a*) too fine print; (*b*) in poor light; (*c*) with book too close to face; (*d*) with lamp in front of face; (*e*) lying down. Do not rub the eyes. Care of ears. Avoid striking or pulling. Clean with water and soft cloth. Never insert hard substance for removing wax or cleaning. Call attention to unfortunates who are deprived of the use of eyes or ears. Teach duty of assisting unfortunates.

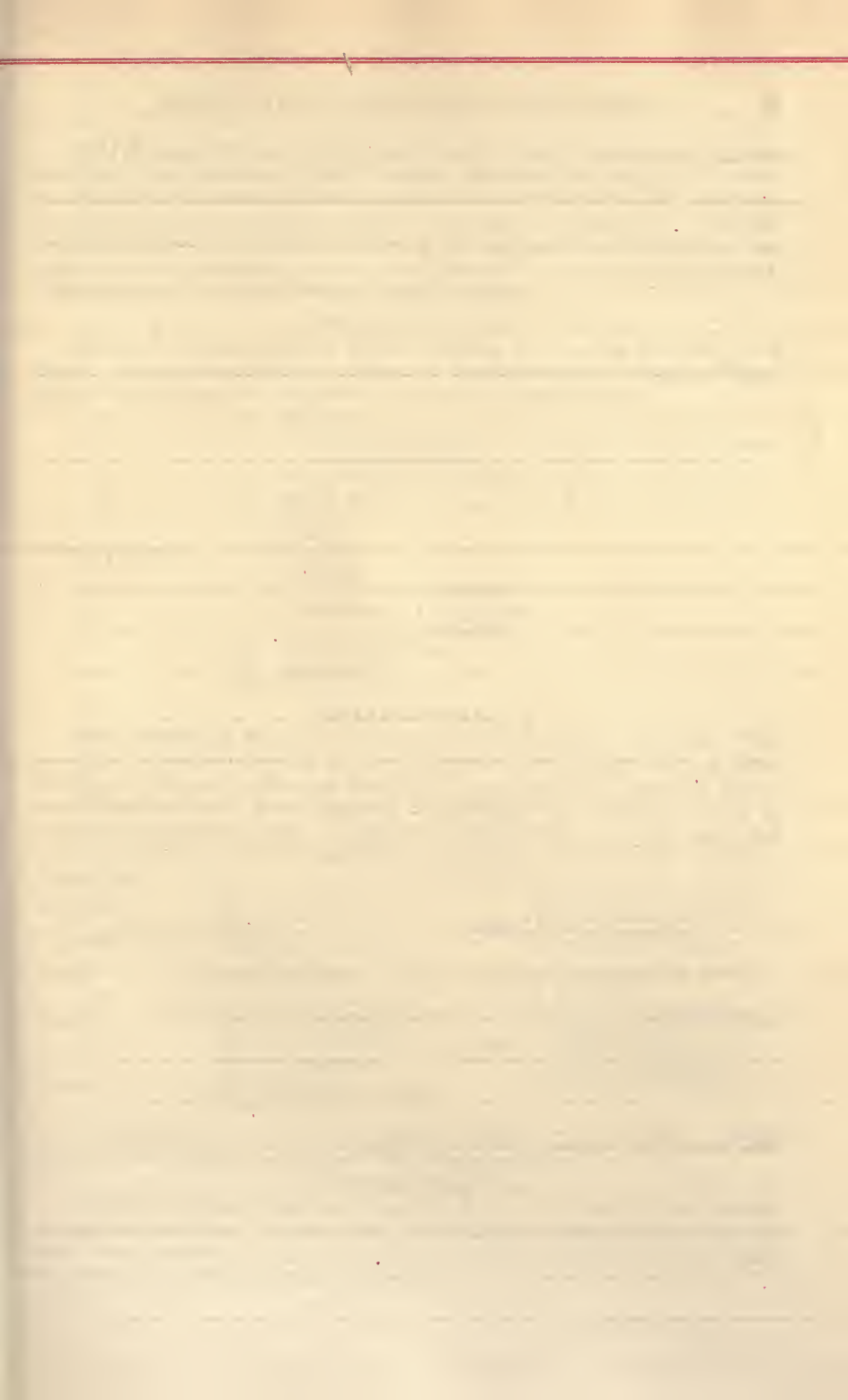
EIGHTH MONTH.

Review.—Definition of anatomy, physiology, and hygiene. Review.

ELEMENTARY GEOGRAPHY.

FIRST MONTH.

Illinois.—Review the fact that there are several townships in the home county, recall the leading points learned about the home township, and the names of the adjoining townships. Teach that there are one hundred two counties in Illinois, and consequently that the home county, even if a large one, is a comparatively small part of the State. The children should know the names of the counties which bound the home county, also the names of a *few* of the more important counties of the State. Have them learn the length and greatest width of the State, and be sure that the numbers mean something to them. Teach the slopes of the land from the direction of the rivers; locate and describe the Rock River, the Illinois, Chicago, Fox, Sangamon, and Kaskaskia rivers; also the rivers bounding the State. Dwell on the character of the soil, variety of crops, manufactures, mining, commerce, etc. Teach four or five of the principal railroads, showing the importance of railroads to the people. Name the respects in which Illinois is the leading State in the Union. Give several days to study of Chicago, Lake Michigan, Chicago River, and the "Drainage Canal"; and teach what you think a fairly intelligent Illinois boy or girl of the fifth grade ought to know about Springfield, Joliet, Aurora, Rockford, Rock Island, Peoria, Bloomington, Danville, Decatur, Quincy, East St. Louis, and Cairo. Make a map of the State showing all the points learned. If time will permit, name and locate the principal State Institutions.





Earth as a Whole.—Study the earth as a whole by means of a globe and map; its motions and their results; divisions into zones with their characteristics; general division of land and water with names and map representations; hemispheres with map questions. Make the transition from the study of the globe to that of the wall-map, accounting for the difference in appearance. Be sure that the idea of "scale" is mastered. This work will include all before North America.

SECOND MONTH.

North America.—Study North America by reading the text and maps. Follow directions of author; in using the book, arrange facts, after study, in the following form for recitation and reviews:

North America....	{	1. Boundary.	{	Animal. Vegetable. Mineral.
		2. Coast lines — Direction, regularity, indentations, and projections.		
		3. Surface—Mountain ranges, plateaus, and plains.		
		4. Lakes, etc.		
		5. Rivers.		
		6. Cities.		
		7. Islands.		
		8. Climate.		
		9. Productions....		
		10. Political divisions.		
		11. Inhabitants.		
		12. Occupations.		

THIRD MONTH.

New England States.—Read text and study maps. Draw map. The form for arranging the work in North America can be used with a little change in this and following divisions. See that some important fact is associated with each place learned, as indicated by question, "*What is important about this place?*" This is the object of the "catchwords" and interrogation points placed after the geographical names given below as examples:

Mountains	{ 1. White (summer resort). 2. Green (Allen).	Lakes { 1. Grand (St. Croix River). 2. Moosehead (game). 3. Winnipiseogee (?). 4. Champlain (French).
Mountain Peaks. {	1. Katahdin (?). 2. Washington (tourists).	Bays.. { 1. Passamaquoddy (fish). 2. Buzzards (?)
Capes.....	{ 1. Ann (lighthouse). 2. Cod (lighthouse).	Cities. { 1. Portland (peninsula). 2. Augusta (U.S. Institutions). 3. Bangor (lumber). 4. Salem (witchcraft). 5. Lowell (cotton goods). 6. Plymouth (Pilgrims).
Islands.....	{ 1. Grand Menan (fisheries). 2. Mt. Desert (summer resort). 3. Martha's Vineyard (?). 4. Block (Adrian Block).	
Rivers	{ 1. St. John (boundary). 2. Penobscot (size). 3. Merrimac (manufactories). 4. Connecticut (?).	

NOTE—Have numerous tracing lessons and imaginary voyages. Make the lesson and the study lively by talks with pupils about history connected with places, with colleges, scenery, tunnels, water power, derivation of names, etc.

FOURTH MONTH.

Middle Atlantic States.—New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and West Virginia. Study as outlined in preceding months, using the blackboard forms, and associating some important fact with each place learned.

The Southern States.—North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, and Tennessee.

FIFTH MONTH.

North Central States.—Ohio, Indiana, Illinois, Kentucky, Michigan, Wisconsin, Minnesota, South Dakota, North Dakota, Iowa, Nebraska, Kansas, and Missouri.

SIXTH MONTH.

The Pacific States and the Territories.—California, Oregon, Washington, Montana, Idaho, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico, Alaska, and District of Columbia.

Dominion of Canada, Greenland, Mexico, Central America, and West Indies.

SEVENTH MONTH.

Europe.—Study as directed for North America.

Asia.—Study as directed for North America.

EIGHTH MONTH.

South America.—Study first as a continent. Draw map of continent, and fill in countries, etc., as learned. Use blackboard form for study and recitation, as given in the study of North America. Continue to make lists of places, associating important facts with each. Use outline maps continually.

Africa and Oceanica.—Study as above.

GEOGRAPHICAL READERS.

Geographical readers will be found very useful in giving fuller descriptions of the social life of the people, of historic places, of commercial products and exchanges, of natural physical features and the work of man upon the earth's surface in the form of canals and irrigating ditches, dikes, deepened harbors, mountain tunnels, deforested regions, cultivated lands, etc., most of which may be factors in making any place what it is.

They may be used as supplementary reading or as reference books only. These are suggested for such use: the whole series of *The World and its People*, consisting of eight books, among them being *Our Country*, *Our American Neighbors*, *Modern Europe*, etc., edited by Larkin Dunton, (Silver, Burdett & Co.); *King's Geographical Readers*, (Lee & Shepard); *Rupert's Geographical Reader*, (Leach, Sewall & Sanborn); *Johonnot's Geographical Reader*, (American Book Co.); *Hans Brinker*, by Mary Mapes Dodge, (Charles Scribner's Sons); *Aunt Martha's Corner Cupboard*, (Thos. Nelson & Sons); *Footprints of Travel*, (Ginn & Co.); *Carpenter's Geographical Reader—Asia*, (American Book Co.)







SIXTH YEAR.

TEXT-BOOKS.—Fourth Reader, Elementary Grammar, Complete Arithmetic, Physiology, Elementary History, Copy-books.

READING.—Fourth reader completed.
SPELLING.—Word study, diacritical marks, etc.

GRAMMAR.—Elementary grammar completed.

ARITHMETIC.—Complete arithmetic begun.

WRITING.—Practical exercises, movements, copy-books.

PHYSIOLOGY.—See fifth year.

HISTORY.—Elementary history.

SCIENCE.—See "Observation Work."

GENERAL EXERCISES.—Music, Drawing, Morals and Manners.

NOTE.—No geography this year except that connected with history.

READING.

Fourth reader finished and reviewed. For suggestions, see fifth year.

Supplementary Reading.—The following books are recommended for this grade: Frye's Brooks and Brook Basins, (Ginn & Co.); Jane Andrews' Ten Boys on the Road from Long Ago to Now, (Ginn & Co.); Longfellow's Courtship of Miles Standish, (Houghton, Mifflin & Co.); Longfellow's Evangeline, (Houghton, Mifflin & Co.); Irving's Legend of Sleepy Hollow (Sketch Book), (Ginn & Co.); Burroughs' Birds and Bees, (Houghton, Mifflin & Co.).

SPELLING.

Alternation.—The work here given is arranged to alternate with the spelling of the fifth year, and that the alternation as begun in this subject in the Course of 1894, may be continued, pupils of the intermediate division should study sixth year spelling during 1897-8, fifth year spelling during 1898-9, and so continue to alternate from year to year. Read the suggestions to teachers at the head of spelling for fifth year before beginning this work.

FIRST MONTH.

1. See that pupils can pronounce and spell all the technical and difficult words that appear in the lessons of the month in grammar, arithmetic, physiology, and history.
2. Learn all the uses of the macron, and give words to illustrate.
3. Pronunciation, spelling, and correct use of the following words: load, lode; lock, loch, lough; lone, loan; liar, lyre; made, maid; male, mail; mane, main; marshal, martial.
4. Have pupils make a list of words containing the prefix *un* and study their meaning. The prefix *dis*.

SECOND MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, physiology, and history.
2. Learn all the uses of the breve, and give words to illustrate.
3. Pronunciation, spelling, and correct use of the following words: mean, mien; meat, meet, mete; mite, might; mote, moat; more, mower; nave, knave; nay, neigh; need, knead.
4. Study words containing the prefix *re*.

THIRD MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, physiology, and history.

2. Learn all the uses of the dieresis, and give words to illustrate.

3. Pronunciation, spelling, and correct use of the following words: **not**, knot; nun, none; oar, o'er, ore; one, won; pale, pail; pane, pain; **pair**, pare, pear; plate, plait.

4. Study words containing the prefix *a*. The prefix *en* or *em*.

FOURTH MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, physiology, and history.

2. Learn all uses of the semi-dieresis (single dot), and give words to illustrate.

NOTE.—The word semi-dieresis is not given in the dictionaries, but is used in Irish's Orthography, and in some other similar works.

3. Pronunciation, spelling, and correct use of the following words: **pole**, poll; pore, pour; pray, prey; principal, principle; rap, wrap; read, reed; rice, rise; rime, rhyme.

4. Study words containing the prefix *be*. The prefix *in* or *im*.

FIFTH MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, physiology, and history.

2. Learn the use of the cedilla, and give words to illustrate.

3. Pronunciation, spelling, and correct use of the following words: **rood**, rude; room, rheum; rote, wrote; ruff, rough; rye, wry; sale, sail; **seen**, scene, seine (?); seam, seem.

4. Study words containing the prefix *fore*. The prefix *pre*.

SIXTH MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, physiology, and history.

2. Learn all the uses of the tilde, and give words to illustrate.

3. Pronunciation, spelling, and correct use of the following words: **serf**, surf; scull, skull; slay, sleigh, sley; sleight, slight; sloe, slow; so, **sow**, sew; soar, sore; sole, soul.

4. Study words containing the prefix *co* or *con*.

SEVENTH MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, physiology, and history.

2. Learn all the uses of the caret, and give words to illustrate.

3. Pronunciation, spelling, and correct use of the following words: **stair**, stare; stake, steak; steal, steel; stile, style; son, sun; suite, sweet; **some**, sum; tare, tear.

4. Study words containing the prefix *mis*.

EIGHTH MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, physiology, and history.

2. Learn the uses of the suspended bar, and give words to illustrate.

3. Pronunciation, spelling, and correct use of the following words: **tear**, tier; their, there; threw, through; time, thyme; to, too, two; toe, **tow**; vale, veil; vane, vain, vein.

4. Study words containing the prefix *super*.



GRAMMAR.

Elementary text-book in grammar completed.

NOTE.—The pupils in fifth and sixth year grammar should be classed together, where it can be done conveniently.

FIRST MONTH.

The Noun.—Gender, person, number, and case. Parsing. Note carefully the methods of distinguishing the genders.

Rules for forming plurals.—1. Nouns whose last sound will unite with *s*. 2. Nouns whose last sound will not unite with *s*. 3. Nouns ending in *y*, preceded by a consonant. 4. Nouns ending in *f* or *fe*. 5. Nouns ending in *o*, preceded by a consonant. 6. Plurals of letters, figures, marks, signs. Note exceptions to the above rules.

Declension.—Decline nouns in common use, and use their various forms in sentences. Show that figures, marks, phrases, and clauses may be used as nouns.

Remember that parsing consists: (1) In naming the part of speech; (2) in telling its properties; (3) in pointing out its relation to other words; (4) in giving the rule for its construction.

SECOND MONTH.

The Pronoun.—Personal, possessive, relative, and interrogative. Name and decline the simple personal pronouns. Special uses of *you*, *we*, and *it*. Compound personal pronouns, how formed. Use of *mine*, *thine*, etc. Uses of *who*, *which*, *that*, and *what*. Continue exercises in parsing and analysis.

THIRD MONTH.

The Adjective.—Descriptive and definitive; degrees of comparison; different methods of comparison; classes of numeral adjectives; errors to be avoided. Continue exercises in parsing, analysis, and composition—oral and written.

FOURTH MONTH.

The Verb.—Transitive and intransitive; regular and irregular; properties—voice, mode, tense, person, and number; auxiliaries; correct use of irregular verbs in sentences. Change sentences from active to passive form. Train the pupils to point out phrases, clauses, and different kinds of sentences as found in the reader.

FIFTH MONTH.

The Adverb.—Adverbs of time, place, cause, manner, and degree. Comparison of adverbs.

SIXTH MONTH.

Prepositions, Conjunctions, and Interjections.—Prepositions—Most pupils have difficulty in understanding what is meant by relation. In most cases this relation is one of position. To make this clear, select prepositions from reader. State word following and preceding it. Conjunctions—Co-ordinate, subordinate, correlative.

Review parts of speech. Have definite forms of parsing each part of speech. Continue exercises in analysis and composition.

SEVENTH MONTH.

Syntax.—Review rules for using the noun and pronoun: (1) as the

subject; (2) in predicate; (3) in the possessive; (4) in apposition; (5) independently; (6) as object of a verb; (7) as object of a preposition; (8) rules governing pronouns; (9) agreement of verbs with subject; (10) rules governing adjectives, adverbs, and infinitives.

EIGHTH MONTH.

Punctuation Marks.—Give attention to the comma, semicolon, colon, period, interrogation point, exclamation point, dash, parenthesis, and bracket. Uses of apostrophe, hyphen, (See dictionary for two forms of hyphen), quotation marks, index, and caret. Require but few rules, but illustrate each fully. Refer to the reader as much as possible in this connection.

WRITING.—Fourth, Fifth, and Sixth Years.

Muscular Movement.—The chief purpose in these grades is to secure skill in muscular movement with which to write easily, rapidly, and well.

The following is a method for muscular movement exclusively, and should not be undertaken with finger movement.

If the teacher writes well, copybooks may be dispensed with; if not, each pupil needs one, and one that contains at least some movement exercises, from which to get correct ideas of the exercises and forms of letters.

Position.—Follow directions given on the cover of the copy-book, except for the paper. When the paper is straight in front and the arm turns on the muscle forward of the elbow for a pivot, (as it should in using muscular movement), it is difficult to follow the line; the writing tends to diverge upward from it. To obviate this difficulty turn the top of the paper a little to the left, not so far as is customary for slanting writing.

For muscular movement *it is necessary* that the muscle of the forearm be upon the desk. To permit this, foolscap paper should be torn or cut so that but half of its length is used at a time.

Keep the wrist above the paper, and glide the hand on the tips of the third and fourth fingers.

Movement.—With the left hand take hold of the muscle of the right forearm, move it forward and backward and roll it from side to side on the bone. It is pliable and will allow enough movement to reach the scope of ordinary capitals, *without sliding on the desk*. This action is called *muscular movement*.

This movement may be acquired by a course of training on movement exercises, and simple letters, not in a few weeks or a term, but possibly during a school year. Do not expect results too soon. Drill for speed and for skill. Advance little and review much.

Rules for Practice.—The following more or less general rules for practice on movement exercises are valuable, and should be taught to the pupils:

1. Slow up movement for short turns which are especially difficult.
2. On large curves and oval turns use free and unrestrained movement.
3. Stop an instant *with pen under control* at angles in last part of *w*, *v*, *b*, *f*, *q*, *o*, and *s*.

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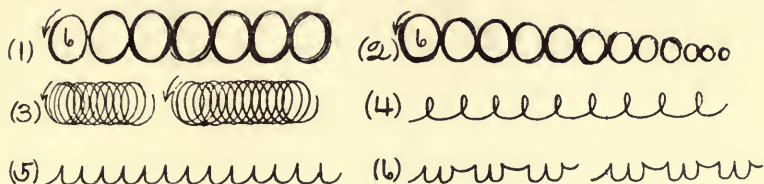
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4. Make the long, straight lines in stem and loop letters with increased speed by the aid of the forefinger and thumb.

FIRST MONTH.



Try first to get a *free* movement, then to *control* it. For a few days at the beginning of each lesson train the arm to a free action before taking the pen. Begin on the traced oval, Ex. 1; go in the direction indicated by the arrow, trace six times and write ovals tangent. Write about twenty-five ovals—150 downward strokes per minute. Use care as to (1) verticality, (2) proportions, (3) shape, (4) tracing, (5) smooth lines. Teach one point at a time.

Write the *running oval*, Ex. 3, compact, that is, strokes near together; try to write it even in every way and avoid slant. Do not take up more than two styles of ovals at any lesson. Write many pages of oval exercises.

Ex. 4. Write (1) vertically, (2) with uniform spaces between the letters, (3) with uniformity as to width of loops. Write nine letters in a group and four groups to a line of foolscap.

Ex. 5. Use care as to (1) verticality, (2) uniform spacing, (3) even turns at bottom.

Ex. 6. The *w* is a *typical* letter of groups 1 and 6. Write three letters in a group, four groups on a line, and from three to six lines per minute.

SECOND MONTH.

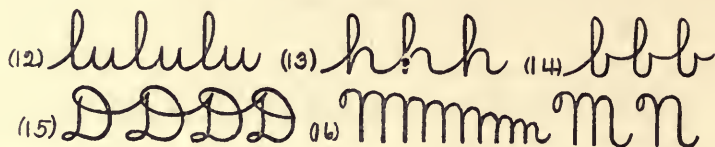


Review! Review!! Review!!! About one half of the practice this month should be on exercises introduced the first month. They are valuable, and pupils can not secure skill for them in one month.

Give special attention this month to Ex's 7, 8, and 9. In the small *m*, Ex. 9, the three parts of the letter should be similar, the downward strokes vertical, and the turn at the top broad and even. The most difficult point in Ex's 8 and 9 is at the turn at the bottom of the last downward stroke of each letter. (See rule 1, page 56.)

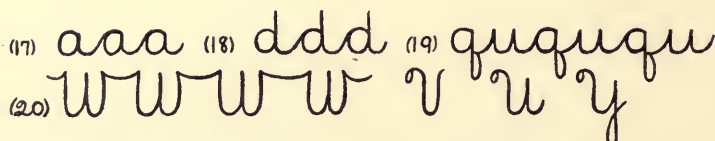
Exercises for this and succeeding months are, many of them, difficult and discouraging at first. Have much work done at the board; it is easier. Write letters singly, then combine them.

THIRD MONTH.



The important thing for this month is the upper loop. Study its form and work on the letters singly at first. Ex. 12 is easier than one of *l*'s only. Put the curve in the upward strokes of the loop and make the downward stroke straight. Loops are made with a rather quick, but not jerky, upward and downward motion. Slow up the movement at the lower part of *l*, *b*, *D*, and the last part of *u*, *h*, *m*, and *n*. Give one fourth of this month's work to review exercises. Drill frequently on small words containing letters which have been practiced in exercises. Strive for speed on easy exercises.

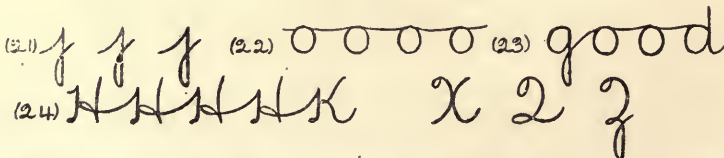
FOURTH MONTH.



The important thing for this month is the *a*, which is found also in *d*, *g*, and *q*. Take a lesson on its form first; notice that it is almost a *circle*, but for one straight side. Write the *a*'s as large as capitals at first, singly and in groups of three. Extend and contract fingers to make the stem of *d*. In *V*, *U*, and *Y* try to get even turn at top and bottom of first downward stroke, avoiding an angle at the bottom, (See Rule 1, page 56).

Review ovals and other exercises previously practiced. Strive for speed on easy exercises. Write many small words combining letters already learned. Drill, drill, drill.

FIFTH MONTH.



A special effort this month should be made upon the lower loop, which is found in *j*, *y*, *g*, and *z*. None of these letters combine easily in a movement exercise, hence it is better to take them singly and in words.

Make *j* with a quick, but not jerky, upward and downward motion. The downward stroke should be straight and the curvature put in the upward stroke. It should be noted that the *o*'s in exercise 22 and 23 are too large.

Ex. 22. Close *o*'s neatly at the middle of the top.

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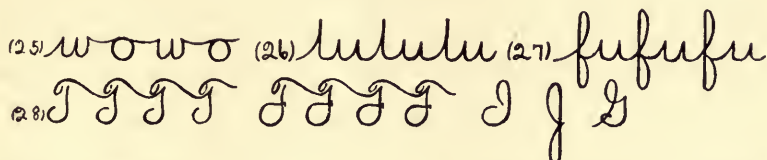
1. *Salix alba* L. 1848
2. *Salix alba* L. 1848

3. *Salix alba* L. 1848
4. *Salix alba* L. 1848

5. *Salix alba* L. 1848
6. *Salix alba* L. 1848

Ex. 23. In the word "good" are four ovals which should be neatly closed.

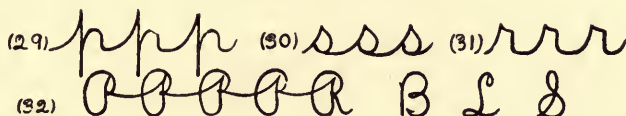
SIXTH MONTH.



Ex. 25. Write *wo*, *ow*, and *wowo*, (See Rule 3, page 56). See Rule 4, page 57, for *l*, in Ex. 26, and *f* in Ex. 27.

Devote one third of the time for writing this month to the advanced exercises 25-28, one third to review, and one third to body writing.

SEVENTH MONTH.



Ex. 29. Write the downward strokes of *p* parallel. Make the first part by the aid of forefinger and thumb, with quick movement; on the second slow up the movement to get broad, even turns at top and bottom. Exercises 31 and 32, (See Rule 1, page 56).

Devote one third of the time for writing this month to advance exercises 29-32, one third to review, and one third to body writing.

EIGHTH MONTH.

Review and drill especially on capitals.

ARITHMETIC.

Pupils now take up some advanced text-book. Arithmetic is presented more as a science that the logical dependence of its topics may be seen. Formal definitions, principles, and rules should be developed, objectively stated and memorized before leaving a subject. Pupils should be taught not to rely upon the answers in the text, but to test their work themselves. Insist upon clear-cut explanations and accuracy in the use of mathematical language. Do not permit them to say "will be," or "would be," instead of *is* or *was*. Use *each* where the sense demands it—not *one*. In concrete problems involving fractions, clear thinking is promoted by stating "of what" after the simple fraction.

FIRST MONTH.

Notation and numeration to six periods. Laws of the decimal system. Roman notation and its laws. Addition—teach pupils to group in adding columns. Compare addition in the decimal system with addition in compound denominate numbers. Pursue same plan in subtraction. Teach correct method of finding difference between dates by counting by years, calendar months, and the remaining days.

SECOND MONTH.

Principles of multiplication. Show that product and multiplicand must have same unit. Show that in such a problem as "How many hours in 365 days," 24 can be used as the multiplier only by first making the multiplicand a number of *hours*. Multiplication of denominate numbers. Teach aliquot parts of 10 and 100, and short method of multiplying by them. Teach short methods of multiplying by such numbers as 100, 600, 17, 71, 998. Division—partition and measurement. Partition of compound numbers. Division when divisor is an aliquot part of 100. Analysis of many concrete problems in partition and measurement. Changing measurement problems to partition. Frequent reviews of definitions and principles.

THIRD MONTH.

Properties of numbers. Teach prime numbers to 100. Learn prime factors of all numbers to 100. Tests of divisibility for 2, 3, 4, 5, 6, 8, 9, 10. How to find prime factors of a large number. Develop the principles of cancellation and straight line analysis.

FOURTH MONTH.

See that every principle is clearly illustrated. Fractions.—By means of divided paper circles, folded sheets, and divided lines show that the denominator (1) is the number of fractional units in the standard *one*, (2) shows the size of the fractional unit, (3) names the fractional unit. Classes of fractions according to value, form, notation. The six principles. Reduction of fractions to lowest terms. At this point take up greatest common divisor. Method by factoring, method by division. Reduction of mixed numbers to simple fractions, improper fractions to mixed numbers. Fractions to equivalent fractions of higher terms.

FIFTH MONTH.

Addition of fractions. Reduction of fractions to equivalents having a common denominator. At this point take up least common multiple. Teach method by factoring. Insist upon clear and full explanations. Practice finding L. C. M. of small numbers by inspection. Addition of two fractions whose numerators are alike. Addition of mixed numbers. Pursue same method with subtraction of fractions.

SIXTH MONTH.

Multiplication of a fraction by an integer: (1) by multiplying number of fractional units $\frac{5}{7} \times 4 = \frac{20}{7}$. (2) by multiplying size of fractional units $\frac{5}{7} \times 4 = \frac{5}{2}$. (3) by multiplying size of fractional units by one factor of multiplier, the number of fractional units by the other; as $\frac{5}{7} \times 4 = \frac{5}{7} \times 2 = \frac{10}{7}$. Show that when multiplier is a fraction there are two operations, partition and multiplication, either of which may precede the other.

Division of a fraction by an integer,—three cases similar to those in multiplication. When divisor is a fraction, first reduce dividend and divisor to equivalents having the same fractional unit. Later, show that the inverted divisor is the quotient of 1 divided by the divisor.

SEVENTH MONTH.

Complex fractions. Find what part one number is of another. Find a number when a specified part of it is given. Show that these two are

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respectively measurement and partition. Study a good list of miscellaneous problems.

EIGHTH MONTH.

Decimals.—Reading and writing—use “*and*” only in reading mixed numbers. See that such forms as $.0\frac{1}{3}$, 300.010, .310, .0300, $7.00\frac{2}{3}$, $.07\frac{3}{4}$ are understood. Carefully pronounce and spell names of the orders. Reduction of common fractions to decimals. Show when a pure decimal is obtained. Show that otherwise we may express the result as a complex decimal, an approximate decimal, or a repeating decimal. Addition and subtraction of complex decimals. Multiplication and division of decimals. Pay special attention to correct placing of point. Limits of accuracy. Teach that divisor and dividend should be multiplied so as to make divisor integral in such cases as $689.74 \div .93\frac{2}{3}$.

ELEMENTARY HISTORY.

This work is arranged in the form of biographies, for the history of any nation consists chiefly of the biographies of its great men. The personal element in history is what attracts and interests the child. Every life is a concrete sermon. The deeds of heroes, whether good or bad, teach with telling effect the worth of virtue and the value of a noble life.

Every historical event has a geographical setting which should be studied in connection with the event. Make free use of maps.

It should be kept in mind that the purpose of the work is to teach United States history and therefore events associated with these biographies in time and place should be studied in connection with them. Do not make the work too heavy. Fix facts by means of stories, “historical burs,” when possible.

Historical Reading.—The following books will be found excellent historical reading in connection with the elementary history. They provide “the flesh and blood” for the skeleton given below. The habit of investigating any subject—reading books, papers, magazines, anything bearing on the subject, and inquiring among friends for the desired information, is a very valuable one that should be formed early. For this work the pupils of the sixth year are not too young. If a taste for history be developed and a love for our own dear country be kindled, the work in history will be well done and the purpose of its use in school accomplished. The list prices of books are given when known. **American History Stories**, by Mara L. Pratt, (Educational Publishing Co., four volumes, 50 cents each); **Glascoek’s Stories of Columbia**, (Pupils’ Reading Circle, 70 cents); **Grandfather’s Chair**, (Houghton, Mifflin & Co., 45 cents); **Scudder’s George Washington**, (Houghton, Mifflin & Co., 75 cents); **Autobiography of Franklin**, (50 cents); **Pioneer History Stories** by McMurry, (Public School Publishing Co., 50 cents); **Uncle Tom’s Cabin**, various editions; **Baldwin’s Four Great Americans**—Washington, Franklin, Webster, and Lincoln, (See Pupil’s Reading Circle list 1897-8, 50 cents)

FIRST MONTH.

Discoveries and Explorations.—*Columbus*.—Birth, time and place;

boyhood; education, wool comber, sailor; manhood, his theory, applies for aid, his patrons, four voyages, discoveries, his death, conclusion. *The Cabots*.—In whose employ, first voyage, results; second voyage, results. *De Soto*.—Mississippi river; burial. *Captain John Smith*.—Nationality, early adventures, explorations on the coast of Virginia, his management of the Jamestown colony, Indian wars, accident, return to Virginia, death.

Write a composition regularly once a month, selecting subjects from the history. In order to succeed, system must be used. 1. Have a composition book in which to copy compositions. 2. Assign a subject, and let the class spend some time in examining authorities, studying and thinking over the subject. 3. An outline should be arranged by the teacher, and the subject treated orally. 4. Write the composition on paper used in school exercises. 5. Teacher then correct spelling, capitals, grammar, etc.

For first month, Columbus or John Smith may be chosen for the subject and outlined as follows:

Columbus.	1. Birth.	{ Place. Date.
	2. Boyhood.	{ Education. Wool comber. Sailor.
	3. Manhood.	{ His theory. Applies for aid. His patrons. Four voyages. Discoveries. His death. Conclusion.

Pupils should use their own language, not what is memorized from books. Distinguish different kinds of composition, as narrative, biography, history, and description; prose and poetry.

SECOND MONTH.

Henry Hudson.—Nationality, in whose employ, purpose of voyage, discoveries, results. *Captain Myles Standish*.—Nationality, profession, a Puritan, founding Plymouth colony, its government, services as a soldier, union of New England colonies—why? *Roger Williams*.—Occupation, banishment—why?; founded Providence colony, went to England—why? *William Penn*.—Religious views, grant of Pennsylvania, Philadelphia, treaty with Indians, government of colony. *James Oglethorpe*.—Grant of Georgia—his object, Savannah founded, government, prosperity.

THIRD MONTH.

Lord Baltimore.—Religious views, grant of Maryland—his object, Claiborne, settling his claim. Toleration Act. *Benjamin Franklin*.—Parentage, education, apprenticeship, occupation, Poor Richard's Almanac, public services as postmaster general, assemblyman, minister to France, as scientist. *Daniel Boone*.—Early life in Pennsylvania and North Carolina, crosses into Tennessee and then into Kentucky, settles Boonesborough. Kentucky; thrilling adventures with Indians and wild beasts; moves to





Missouri, death. Other pioneers in the Mississippi valley—*James Robertson, John Sevier, George Rogers Clarke, LaSalle, Joliet, Marquette, and Hennepin.*

FOURTH MONTH.

George Washington.—Birth, when and where; residence, education, sports; public surveyor; services in the French and Indian war; services in the Revolution; state causes of the war, its progress and close; his services as President, condition of states at close of war; Articles of Confederation, the Federal Constitution; elected President, length of service, what accomplished, first cabinet, judiciary, mint and bank, French troubles, new states, retirement from public life, death, where buried.

FIFTH MONTH.

Thomas Jefferson.—Education, inheritance, accomplishments, Declaration of Independence, state papers, purchase of Louisiana, death. *Robert Fulton.*—Boyhood, his paddle-wheel fishing boat, iron bridges, his diving-boat, torpedo, steamboat—its service in settling the West. *William Henry Harrison*—Governor of Indiana territory, battle of Tippecanoe in war of 1812, battle of the Thames in Canada, elected President, death—why?

SIXTH MONTH.

Andrew Jackson.—Boyhood, part in Revolution, stories illustrating his character, in War of 1812, battle of New Orleans, Indian war in the South; purchase of Florida, elected President; first steam railroad in the United States—how railroads helped to settle the West. *Professor Morse.*—A painter, conceives idea of telegraph, difficulties, aids and success in inventing and patenting his machine, first telegraph line, Atlantic cables (Cyrus Field), the telephone, what these have done for us socially and commercially.

SEVENTH MONTH.

Abraham Lincoln.—Early life and training, education, physical strength, trip to New Orleans, a rail splitter, his honesty, surveyor, a lawyer, elected to the Legislature, Congress, presidency of the United States. In this connection study the essential movements of the Civil war, result of the war. His death.

EIGHTH MONTH.

Since the War.—Impeachment of President Johnson, constitutional amendments, purchase of Alaska; the Pacific railroad, Treaty of Washington, panic of 1873, Centennial Exhibition, Indian wars, disputed election, railroad riots, yellow fever, assassination of President Garfield, civil service reform. Columbian Exposition.



SEVENTH YEAR.

TEXT-BOOKS—Fifth Reader, Advanced Grammar, Arithmetic, Geography, History, and Physiology.

READING.—Fifth reader.

ORTHOGRAPHY.—Rules, terms, etc.

GRAMMAR AND COMPOSITION.—Etymology, practical composition.

ARITHMETIC.—Business arithmetic.

WRITING.—Business and social forms.

GEOGRAPHY.—Mathematical and political

HISTORY.—Discoveries to Constitutional period.

PHYSIOLOGY.—Physiology completed.

SCIENCE.—See "Observation Work."

GENERAL EXERCISES.—Music, Drawing, Morals and Manners.

READING.

Complete about sixty per cent of fifth reader. The teacher is referred to what has been said of reading in the fourth reader grade. All that applies to that grade may be utilized in the advanced division. Ability to read well can only be attained, as proficiency in the other branches is, by study and practice, by regular and continued effort. Random work, work without a well laid plan, will accomplish but little. The efforts exerted must be steady. If a fifth reader is dispensed with, as some have advised, something as good or better must take its place, such as supplementary reading of the proper grade, consisting of good selections taken from the best American and English authors.

Supplementary Reading.—The following books are recommended for this grade in addition to those named in sixth year elementary history: Burrough's Sharp Eyes and Other Papers, (Houghton, Mifflin & Co.); Lamb's Tales of Shakespeare, (Ginn & Co. and Houghton, Mifflin & Co.); Hawthorne's Tales of White Hills, (Houghton, Mifflin & Co.); Holmes' Grandmother's Story of Bunker Hill, (Houghton, Mifflin & Co.); Whittier's Snow-Bound and Other Poems, (Houghton, Mifflin & Co.); Shakespeare's Merchant of Venice; Hale's The Man Without a Country, (Roberts Bros., Boston.) Guerber's Story of the Greeks, Story of the Romans, Story of the Chosen People, three volumes, (American Book Co.).

ORTHOGRAPHY.

To the Teacher.—Read the suggestions at the head of spelling for fifth year. Practical work in spelling and pronunciation are still prominent, although some attention is given to a systematic study of orthography. Have all terms in orthography fully illustrated so that pupils will comprehend their meaning, rather than give formal definitions which may not be understood. Remember that the work here given is suggestive rather than exhaustive, and that much is to be supplied by the teacher. The lists of words for pronunciation from month to month may be used profitably at roll call instead of having pupils answer "present."

Alternation.—The orthography of the seventh and the eighth years is arranged to alternate, and to keep up the plan of alternation as it began in the Course of 1894 teach eighth year orthography during 1897-8, and what is given below during 1898-9, and so continue to alternate.

FIRST MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, physiology, and history.

2. Select and define a list of words in which *tend* (to stretch) enters as a part; as, attend, extend, distend.

3. Elementary sound defined. Number of elementary sounds in the English language. Three classes of elementary sounds; vocals or tonics,



THE HISTORY OF THE CITY OF BOSTON

By SAMUEL JOHNSON, Esq. of the Middle Temple, Barrister at Law.
In Four Volumes.
LONDON: Printed by J. DODD, in Pall-mall, 1786.

CONTENTS.

BOOK I. The first settlement of the English in Boston, 1630. The first year of the settlement, 1630. The second year, 1631. The third year, 1632. The fourth year, 1633. The fifth year, 1634. The sixth year, 1635. The seventh year, 1636. The eighth year, 1637. The ninth year, 1638. The tenth year, 1639. The eleventh year, 1640. The twelfth year, 1641. The thirteenth year, 1642. The fourteenth year, 1643. The fifteenth year, 1644. The sixteenth year, 1645. The seventeenth year, 1646. The eighteenth year, 1647. The nineteenth year, 1648. The twentieth year, 1649. The twenty-first year, 1650. The twenty-second year, 1651. The twenty-third year, 1652. The twenty-fourth year, 1653. The twenty-fifth year, 1654. The twenty-sixth year, 1655. The twenty-seventh year, 1656. The twenty-eighth year, 1657. The twenty-ninth year, 1658. The thirtieth year, 1659. The thirty-first year, 1660. The thirty-second year, 1661. The thirty-third year, 1662. The thirty-fourth year, 1663. The thirty-fifth year, 1664. The thirty-sixth year, 1665. The thirty-seventh year, 1666. The thirty-eighth year, 1667. The thirty-ninth year, 1668. The fortieth year, 1669. The forty-first year, 1670. The forty-second year, 1671. The forty-third year, 1672. The forty-fourth year, 1673. The forty-fifth year, 1674. The forty-sixth year, 1675. The forty-seventh year, 1676. The forty-eighth year, 1677. The forty-ninth year, 1678. The fiftieth year, 1679. The fifty-first year, 1680. The fifty-second year, 1681. The fifty-third year, 1682. The fifty-fourth year, 1683. The fifty-fifth year, 1684. The fifty-sixth year, 1685. The fifty-seventh year, 1686. The fifty-eighth year, 1687. The fifty-ninth year, 1688. The sixtieth year, 1689. The sixty-first year, 1690. The sixty-second year, 1691. The sixty-third year, 1692. The sixty-fourth year, 1693. The sixty-fifth year, 1694. The sixty-sixth year, 1695. The sixty-seventh year, 1696. The sixty-eighth year, 1697. The sixty-ninth year, 1698. The seventieth year, 1699. The seventy-first year, 1700. The seventy-second year, 1701. The seventy-third year, 1702. The seventy-fourth year, 1703. The seventy-fifth year, 1704. The seventy-sixth year, 1705. The seventy-seventh year, 1706. The seventy-eighth year, 1707. The seventy-ninth year, 1708. The eightieth year, 1709. The eighty-first year, 1710. The eighty-second year, 1711. The eighty-third year, 1712. The eighty-fourth year, 1713. The eighty-fifth year, 1714. The eighty-sixth year, 1715. The eighty-seventh year, 1716. The eighty-eighth year, 1717. The eighty-ninth year, 1718. The ninetieth year, 1719. The ninety-first year, 1720. The ninety-second year, 1721. The ninety-third year, 1722. The ninety-fourth year, 1723. The ninety-fifth year, 1724. The ninety-sixth year, 1725. The ninety-seventh year, 1726. The ninety-eighth year, 1727. The ninety-ninth year, 1728. The hundredth year, 1729.

APPENDIX.

BOOK II. The first settlement of the English in Boston, 1630. The first year of the settlement, 1630. The second year, 1631. The third year, 1632. The fourth year, 1633. The fifth year, 1634. The sixth year, 1635. The seventh year, 1636. The eighth year, 1637. The ninth year, 1638. The tenth year, 1639. The eleventh year, 1640. The twelfth year, 1641. The thirteenth year, 1642. The fourteenth year, 1643. The fifteenth year, 1644. The sixteenth year, 1645. The seventeenth year, 1646. The eighteenth year, 1647. The nineteenth year, 1648. The twentieth year, 1649. The twenty-first year, 1650. The twenty-second year, 1651. The twenty-third year, 1652. The twenty-fourth year, 1653. The twenty-fifth year, 1654. The twenty-sixth year, 1655. The twenty-seventh year, 1656. The twenty-eighth year, 1657. The twenty-ninth year, 1658. The thirtieth year, 1659. The thirty-first year, 1660. The thirty-second year, 1661. The thirty-third year, 1662. The thirty-fourth year, 1663. The thirty-fifth year, 1664. The thirty-sixth year, 1665. The thirty-seventh year, 1666. The thirty-eighth year, 1667. The thirty-ninth year, 1668. The fortieth year, 1669. The forty-first year, 1670. The forty-second year, 1671. The forty-third year, 1672. The forty-fourth year, 1673. The forty-fifth year, 1674. The forty-sixth year, 1675. The forty-seventh year, 1676. The forty-eighth year, 1677. The forty-ninth year, 1678. The fiftieth year, 1679. The fifty-first year, 1680. The fifty-second year, 1681. The fifty-third year, 1682. The fifty-fourth year, 1683. The fifty-fifth year, 1684. The fifty-sixth year, 1685. The fifty-seventh year, 1686. The fifty-eighth year, 1687. The fifty-ninth year, 1688. The sixtieth year, 1689. The sixty-first year, 1690. The sixty-second year, 1691. The sixty-third year, 1692. The sixty-fourth year, 1693. The sixty-fifth year, 1694. The sixty-sixth year, 1695. The sixty-seventh year, 1696. The sixty-eighth year, 1697. The sixty-ninth year, 1698. The seventieth year, 1699. The seventy-first year, 1700. The seventy-second year, 1701. The seventy-third year, 1702. The seventy-fourth year, 1703. The seventy-fifth year, 1704. The seventy-sixth year, 1705. The seventy-seventh year, 1706. The seventy-eighth year, 1707. The seventy-ninth year, 1708. The eightieth year, 1709. The eighty-first year, 1710. The eighty-second year, 1711. The eighty-third year, 1712. The eighty-fourth year, 1713. The eighty-fifth year, 1714. The eighty-sixth year, 1715. The eighty-seventh year, 1716. The eighty-eighth year, 1717. The eighty-ninth year, 1718. The ninetieth year, 1719. The ninety-first year, 1720. The ninety-second year, 1721. The ninety-third year, 1722. The ninety-fourth year, 1723. The ninety-fifth year, 1724. The ninety-sixth year, 1725. The ninety-seventh year, 1726. The ninety-eighth year, 1727. The ninety-ninth year, 1728. The hundredth year, 1729.

subvocals or subtonics, aspirates or atonics. Cognate sounds. Review elementary sounds and diacritical marks used in representing them. Phonotypy defined.

4. Write a list of words to illustrate the rule that, "Silent final *e* is dropped when a suffix beginning with a vowel is added." Give exceptions.

5. Pronunciation and diacritical markings of the following words: aerial, alas, alkali, antique, aorta, ant, aunt, apricot, Arab, archipelago, architect, arctic, auxiliary, bacon, bade, banana, bevel, bomb, bulk, caught.

SECOND MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, physiology, and history.

2. Select and define a list of words containing *pel* (to drive); as, expel, propel, compel.

3. Letter defined. Alphabet defined. Number of letters in English alphabet with some interesting facts about the history of our alphabet. Name of a letter. Power of a letter. Letters divided according to form into capitals, small capitals, and small or lower case letters. (Why called lower case letters?) Different styles of letters used in printing; as, Roman, Italic, script, etc. Different sizes of letters used in printing; as, Nonpareil or 6 point, Brevier or 8 point, Long Primer or 10 point, Pica or 12 point, etc.

4. Write a list of words to illustrate the rule that, "Silent final *e* is retained when a suffix beginning with a consonant is added." Give exceptions.

5. Pronunciation and diacritical markings of the following words: cayenne, chasten, civil, comrade, conclusion, constitution, coral, deaf, dessert, dictionary, dishonest, docile, dog, doth, duty, erring, error, examine, extraordinary, faucet.

THIRD MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, physiology, and history.

2. Select and define a list of words containing *ply* (to fold); as, apply, comply, multiply.

3. Letters divided into vowels and consonants. Seven vowels: *a, e, i, o, u, w*, and *y*. When are *w* and *y* vowels? When consonants? When is *i* a consonant? When is *u* a consonant? Diphthong, proper and improper or digraph. Triphthong, proper and improper or trigraph. Make a list of words to illustrate the different diphthongs and triphthongs.

4. Write a list of words to illustrate the rule that, "When a suffix is added to a word ending in *y*, preceded by a consonant, the *y* is changed to *i*." Note exceptions.

5. Pronunciation and diacritical markings of the following words: February, fetid, fifth, florist, foreign, forest, forge, fortnight, geyser, gooseberry, grovel, halibut, heaven, hog, horror, hovel, indisputable, interesting, isothermal, Italic.

FOURTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of

the month in grammar, arithmetic, geography, physiology, and history.

2. Select and define a list of words containing *mit* (to send); as, transmit, remit, commit.

3. Consonants divided into labials (*b, f, m, p, v, w*, and *wh*); dentals (*j, s, z, ch, sh, zh*, soft *c*, and soft *g*); linguals (*d, l, n, r, t, y*, aspirate *th*, and subvocal *th*); palatals (*k, q, x*, hard *c*, hard *g*, and *ng*). Define mute and semivocal. Consonants divided into subvocal letters (*b, d*, hard *g, j*, soft *g, l, m, n, r, v, w, y, z*, subvocal *th, zh*, and *ng*); and aspirate letters (*c, f, h, k, p, q, s, t*, aspirate *th, ch, sh*, and *wh*).

4. Write a list of words to illustrate the rule that, "Monosyllables and words accented on the last syllable ending with a single consonant preceded by a single vowel, double the final letter on receiving a suffix beginning with a vowel." *X* is never doubled.

5. Pronunciation and diacritical markings of the following words: jaundice, jaunty, jog, kernel, kitchen, lair, laths, Latin, launch, laundry, laurel, legislature, length, lesson, level, licorice, linen, masculine, mas-sacred, matronly.

FIFTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, physiology, and history.

2. Select and define a list of words containing *vert* (to turn); as, convert, subvert, divert.

3. Silent letter defined. Four uses of silent letters; to modify sounds of other letters in same syllable, to indicate pronunciation, to determine meaning of words, to show derivation.

4. Write a list of words to illustrate the rule that, "A final consonant, where it is not preceded by a single vowel, or when the accent is not on the last syllable, should remain single when a suffix is added."

5. Pronunciation and diacritical markings of the following words: mensuration, miscellany, mischief, moral, moths, mountainous, mouths, mussel, nape, ne'er, neuralgia, neuter, niche, nomad, novel, oasis, oaths, obstacle, offer, office.

SIXTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, physiology, and history.

2. Select and define a list of words containing *pose*, (to put or place); as compose, transpose, expose.

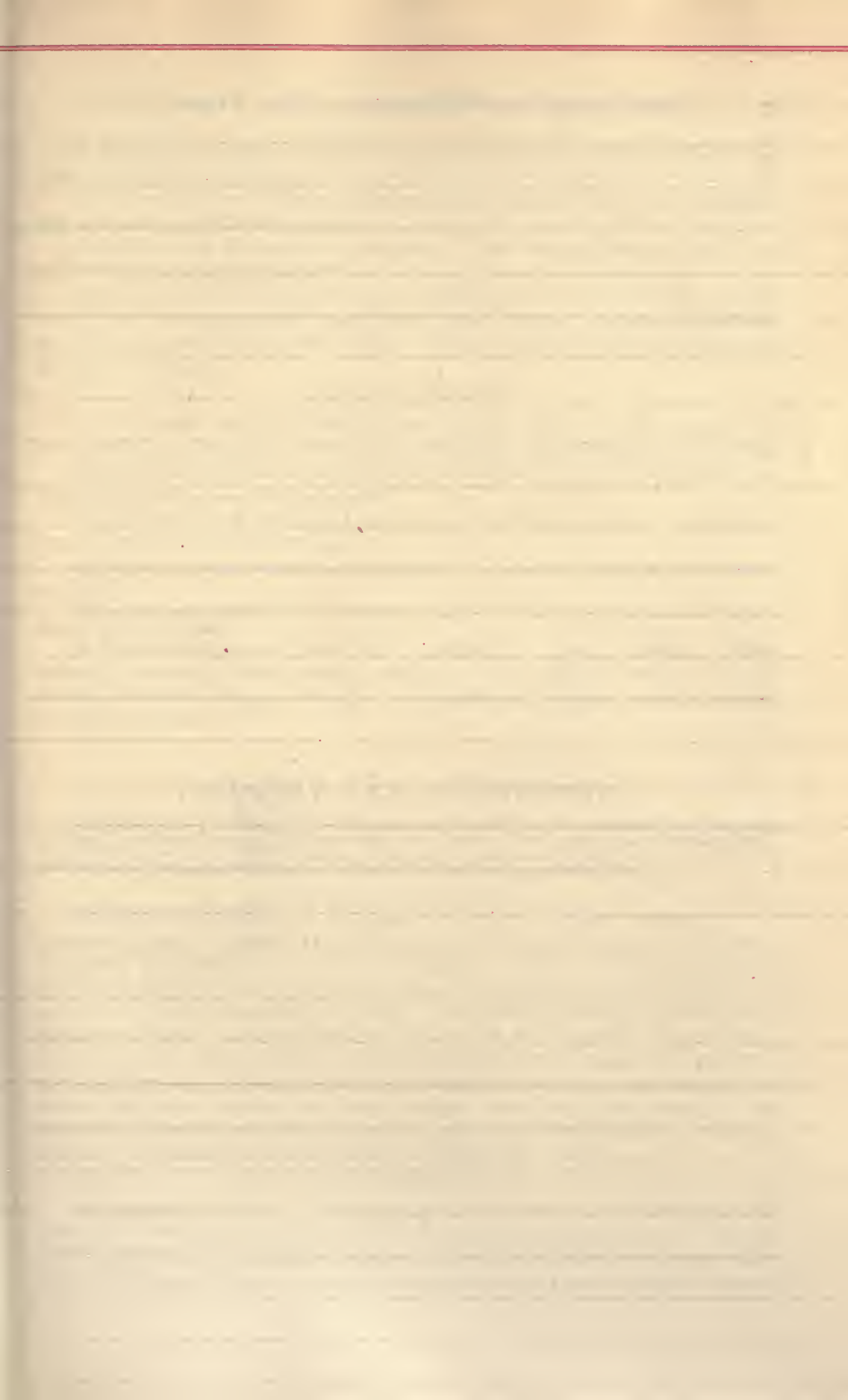
3. Write a list of words to illustrate the principle that, "A constituting or ending an unaccented syllable is short Italian *a*."

4. Write a list of words to show that, "E final is silent when preceded by another vowel in the same syllable."

5. Pronunciation and diacritical markings of the following words: orthoepy, ought, parent, paths, patriotism, patronage, philosophy, piazza, pistil, plateau, pollen, pommel, portrait, prairie, precise, pretty, pronunciation, raisin, resin, romance.

SEVENTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, physiology, and history.





2. Select and define a list of words containing *tract* (to draw); as, attract, detract, subtract.

3. Write a list of words to illustrate the principle that, "*E* constituting or ending a syllable is long."

4. Write a list of words to show that, "*B* is usually silent before *t* or after *m* in the same syllable."

5. Pronunciation and diacritical markings of the following words: route, routine, sacrament, sagacious, salve, satin, saunter, secretary, scoff, scallop, seven, sheaths, shekel, similar, soft, solemn, solution, soot, sought, sovereign.

EIGHTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, physiology, and history.

2. Select and define a list of words containing *meter* (a measure); as, barometer, chronometer, perimeter.

3. Write a list of words to illustrate the principle that, "*O* constituting or ending a syllable is long."

4. Write a list of words to show that, "*C* is silent before *k* in the same syllable."

C is also silent in czar, czarina, victuals, muscle, corpuscle, indict, indicter, indictment, and Connecticut.

5. Pronunciation and diacritical markings of the following words: spherical, student, stupid, suite, swollen, taught, thither, thought, torrid, toward, treason, tripod, trough, tune, tyranny, Uranus, usurp, valise, victuals, woman.

GRAMMAR AND COMPOSITION.

Alternation.—The work of the seventh and eighth years is arranged to alternate, and that the alternation which began with the Course of 1894 may be continued without interruption, the work of the eighth year should be studied during 1897-8, that of the seventh year during 1898-9, and so continue to alternate from year to year.

ENGLISH COMPOSITION.

English composition to be done well must be done regularly. All exercises should be written in black ink on good white paper. Paper of the same size should be used by all pupils. There should always be a good margin on the left side of the paper. The teacher should correct all exercises, and if they are not neatly and legibly written, should have them re-written. *Good mechanical form is the first essential of good composition work.* The purpose of composition is not to teach the pupil to make bad prose out of good poetry, or skillfully to copy the thoughts of others, but is to express his own thoughts naturally and simply. The following exercises should seldom be more than one hundred words in length. Do not allow abbreviations in composition work.

FIRST MONTH.

Sentences.—Define. Lead pupils to see their parts—subject and predicate. Illustrate in many ways from grammar and reader. Classify with respect to use, and with respect to form. Practice classifying sentences in reading lessons. In the composition work cause pupils to find

illustrations of all they have learned. Teach pupils how to form complex and compound sentences. Observe the difference between members and clauses.

ENGLISH COMPOSITION.

1. Write a friendly letter to some boy or girl whom you know, telling of the events of the week, and asking for some information. Place the date on the first two lines at the right, and begin on the third line at the left with his name; thus,

URBANA, ILLINOIS,
March 23, 1897.

MY DEAR BOB,—

End this letter with "Sincerely yours," and your own name.

2. Imagine your mother away from home and write her a letter telling her what has happened since she has been gone. Begin as in (1), and sign yourself so as to express your real feeling.

3. Write a brief newspaper account of a runaway, giving time, place, cause, and result. Tell only the things people want to know.

4. Write a description of some one whom you like and whom the class know, mentioning the facts concerning age, size, dress, features, habits, and character which would make it possible for the class to recognize the person described.

SECOND MONTH.

The Noun.—Define. Write lists of all nouns in reading lessons. Classify the nouns of these lists into *proper* and *common*. Note how nouns may change classes. Classify common nouns into class nouns, abstract, collective, and verbal. Readers will supply large lists. They should be studied until these distinctions are clear, and nouns classified readily.

Properties.—Gender, define. Classify the lists already collected. Review ways of distinguishing the genders. Study *person* in the same way. Observe that few nouns are in the first person. Why? Study *number* same way. Study and practice on unusual rules for forming plurals. Note how plurals of letters, figures, etc., are formed. Case. Use not only the lists already made, but collect others, and drill on applying definitions. Be sure to review case after studying the verb. The following is a good model for written parsing:

"John studies grammar."

John, p. n., m. g., 3 p., s. n., n. c., according to rule (state it.).

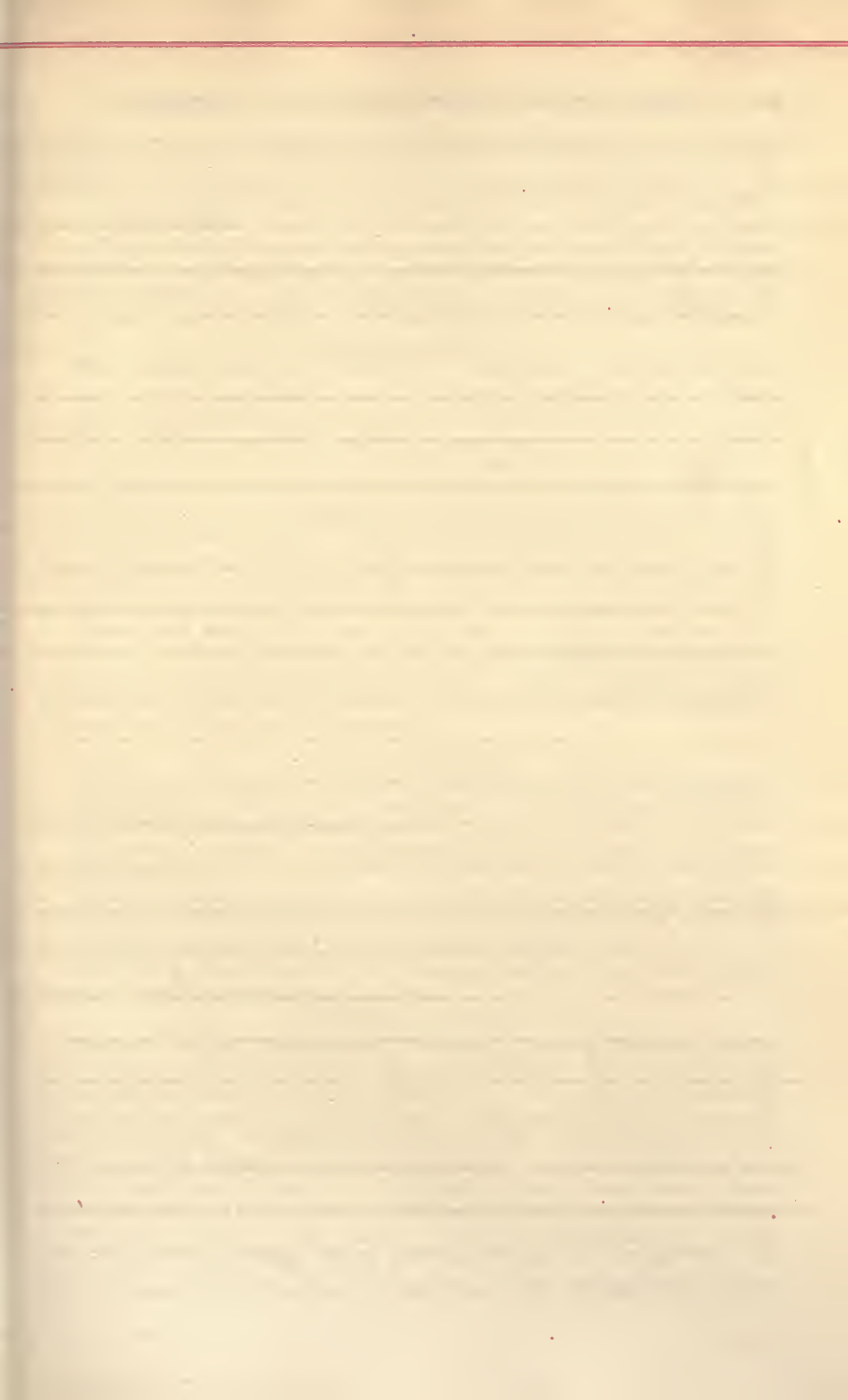
Studies, v., reg., (give parts) tr., a. v., c. f., ind. m., pres. t., 3 p., s. n., rule, etc.

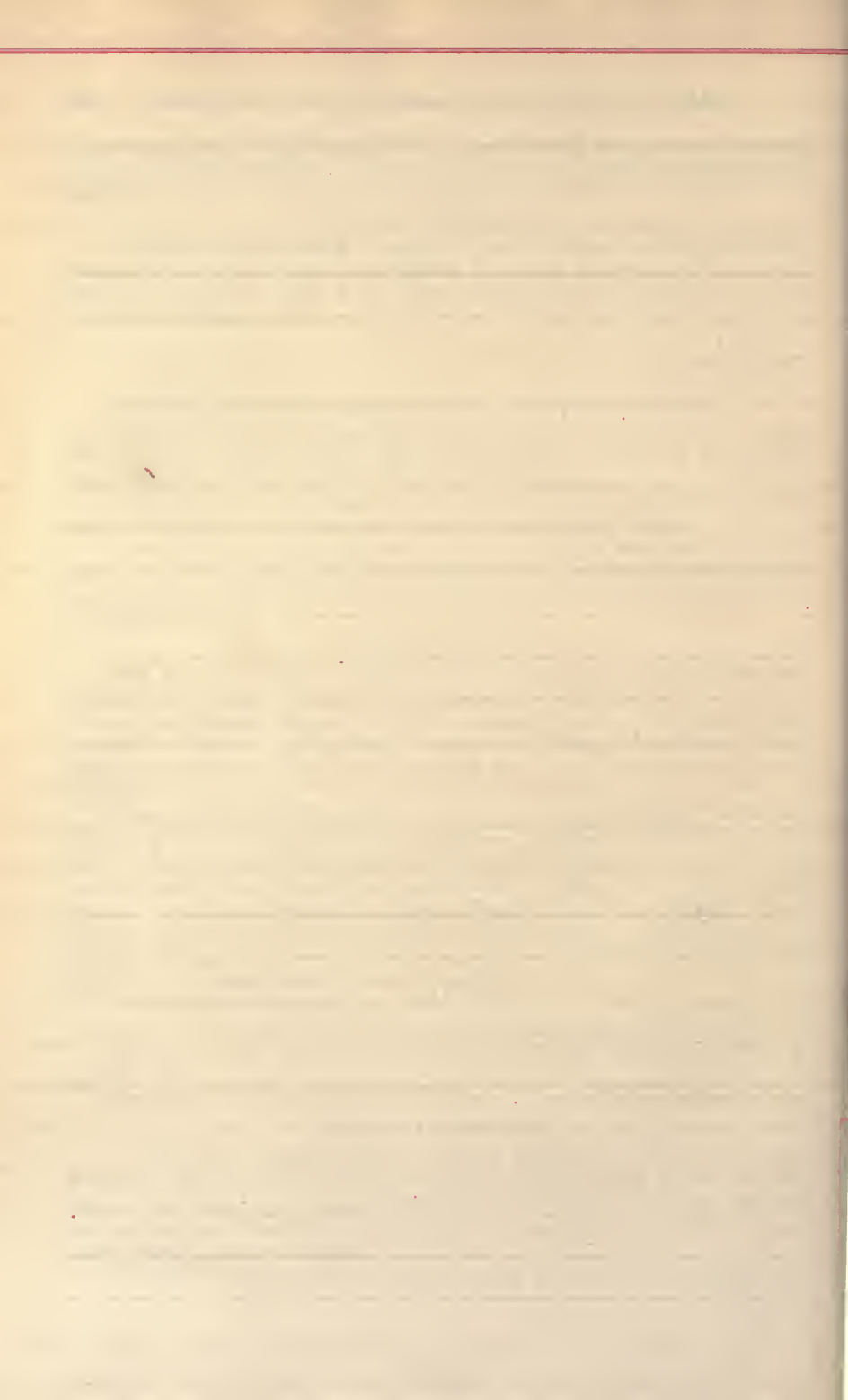
Make the class able to parse the nouns in any ordinary reading lesson.

ENGLISH COMPOSITION.

1. Write a note to Simon Rose, Gilman, Illinois, and ask him to pay \$50 which he has owed you for one year. Place the date on the first two lines at the right, his name and address on the next two at the left, and on the fifth line below this "Dear Sir,—". End this letter with "Very truly yours," and your name.

2. Write a brief account of a social party held in your neighborhood





telling when, where, and why it was held, and how the people were entertained.

3. Write a description of some stranger whom you have lately seen. See (4) first month.

4. Write a note to your teacher asking her to excuse your absence from school and giving reasons for such absence. Begin this with her name at the left as: "My dear Miss Brown,—" End with "Very respectfully yours," and your name. Put the date at the end on the left side.

THIRD MONTH.

The Verb.—Learn full definition. Form lists from readers, and classify into verbs denoting action, denoting being, denoting state. Classify all verbs denoting actions into transitive and intransitive, and define. To the intransitive, add verbs denoting *being* and *state*. Study the copula. The verbs sometimes used as copulative verbs. Study participles; every transitive verb has six participles; every intransitive verb, three participles. Write participles of verbs listed. Find and write many sentences containing them. Classify verbs with respect to form. Learn the principal parts of verbs listed. Study lists of irregular verbs given in text-books as to principal parts. Note three classes: 1. Parts all alike; 2. Two parts alike; 3. No two alike. Learn definition.

Voice and Mode.—Practice with reader on changing from one voice to another. In this practice lead pupils to see that intransitive verbs have but one form. Auxiliaries; learn list. Mode; define. Make lists of verbs from readers, and classify the modes. Learn forms of modes by observing the auxiliaries which help make each.

ENGLISH COMPOSITION.

1. Write a description of the house in which you live selecting details with reference to size, shape, location, and surroundings which would make it seem a pleasant place to live.

2. Write a description of such a home-plan as you would like to have for your own.

3. Write a note of invitation to a party to be given at your house on the evening of Thanksgiving Day. Begin and end this note as in the first month, excepting that the date is at the end left side.

4. Write a note declining the invitation written last week giving reasons. Begin and end as in that note.

FOURTH MONTH.

Tense.—Define. Three general divisions. Relative divisions. Again form lists of verbs from readers, and classify tenses. Teacher and pupils study and criticise lists in class till all are correct. Observe number of tenses in each mode, and their forms. Write forms of each verb in all modes and tenses. Person and number of verbs. Note change of verb for third person singular, and for solemn style. Define conjugation, and study conjugation of *to be*. Note its principal parts, *am* or *be*, *was*, *been*. Learn this rule and practice it: "With *have*, *has* and *had*, use the perfect participle to form the perfect tenses." Learn the principal parts of *go*, and other irregular verbs. Study and state formation of each tense in each mode. Conjugate *fly*, *fall*, *rise*, etc. Write conjugations in full.

Note use of auxiliaries to show tenses. Observe change to agree in person and number, to aid in smooth and easy articulation. Criticise your own composition on these points.

ENGLISH COMPOSITION.

1. Write a short newspaper account of the Thanksgiving party mentioned last month, giving time, place, object, if any, and manner of entertaining guests. Tell always what those who were not present would like to know.

2. Write a note to Clyde M. Myers, Tuscola, Illinois, thanking him for a book which he has sent you. Begin your note "My dear Mr. Myers," and end as in (3), third month.

3. Write a paragraph on "What I should like Christmas." Tell naturally and specifically the things you really want, going somewhat into detail.

4. Write a page on "Why I like Winter," giving definite reasons why it seems to you a pleasant season, and illustrating these reasons.

FIFTH MONTH.

Conjugation.—Study conjugation of transitive verbs in both voices. Observe likenesses and differences. In passive voice only one of the principal parts appears. Conjugate *see*, *shake*, and *slay*. Why name principal parts? Define synopsis. Make synopsis in full of all verbs studied. The forms already studied are called the common forms. Study emphatic, progressive, and solemn forms. Note defective and redundant verbs. Again study table of irregular verbs, and compare with regular verbs. Conjugate and compare the transitive verb *lay* and intransitive verb *lie* (to recline). Same with *set* and *sit*. Review. Parse exercises furnished by text-book and by readers.

ENGLISH COMPOSITION.

1. Write a short composition on "How I Spent Christmas." Tell where you were, what you did, and what presents you received and gave.

2. Write the biography of some person you know. Consult any biography for method.

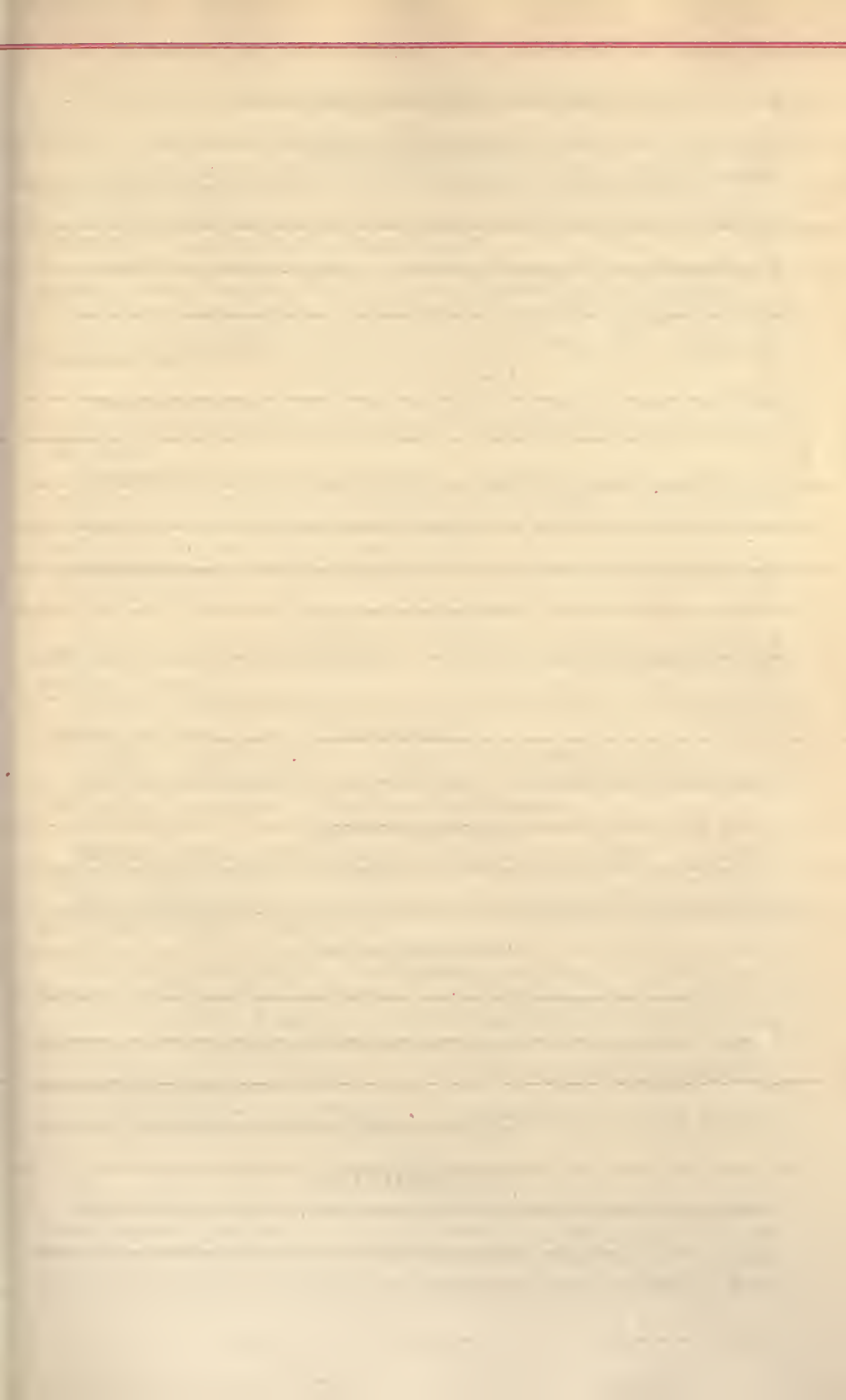
3. Write a short composition on "My First Visit to the County Fair." Tell of only a few things you saw and how they impressed you.

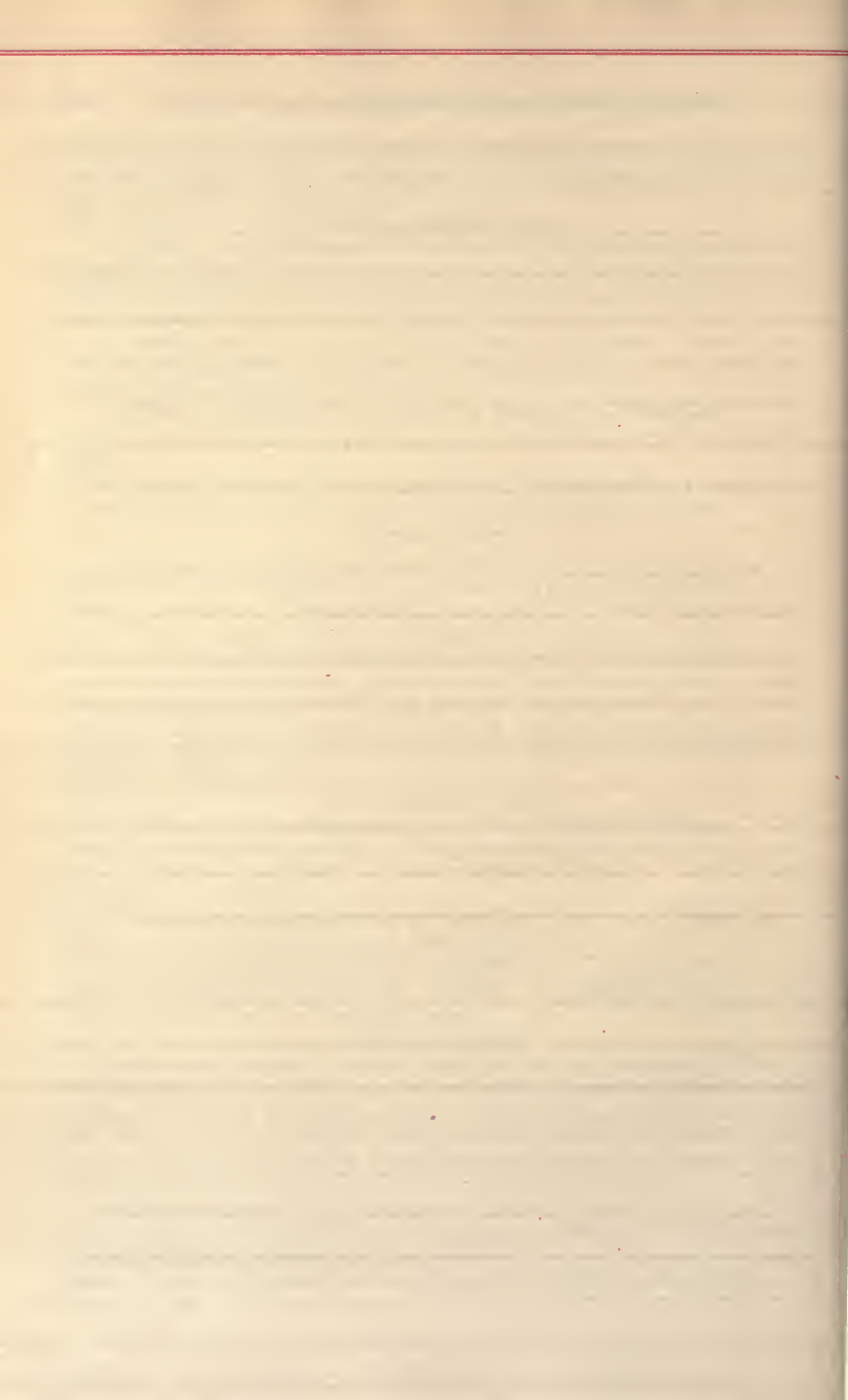
4. Write an answer to the letter you wrote in (1), first month, beginning and ending as in that letter. Answer the questions asked in the first letter before you tell anything new.

SIXTH MONTH.

Pronouns.—Define. Search reader for kinds of pronouns. Classify list into *personal*, *relative*, and *interrogative*. Learn definition of each accurately. Study personal pronouns. Put all forms of each class into one list and learn declension. Study order of parsing and models. Criticise your own language and composition with reference to correct use of pronouns in predicate.

Adjectives.—Study the adjective; define. Make lists as before, classifying by definitions into *descriptive* and *definitive*. Classify definitives into *articles*, *pronominals*, and *numerals*, or as your text classifies them. Study comparison and note classes that admit of comparison.





ENGLISH COMPOSITION.

1. Re-tell a short funny story which you have heard. Keep the amusing part until the last.

2. Write a paragraph on "My First Valentine." Tell when you received it, what was on it, and who sent it.

3. Write an autobiography. Use any biography you choose as a pattern, and tell only the events of your life which affected you most.

4. Write a paragraph on "What I Saw on My Way to School." Try to tell what the neighborhood in which you live looks like. Select only important things.

SEVENTH MONTH.

Adverbs.—Define. Make lists as before. Classify into adverbs of *time, place, cause, manner, and degree*. Comparison; order of parsing, and models.

Prepositions and Conjunctions.—Learn list and classify into co-ordinate and subordinate; sub-class, if time permits. Study order of parsing and models for same; notice models for parsing correlatives, and combinations of words used as conjunctions.

Interjections.—Practice parsing many miscellaneous selections, and review the noun.

ENGLISH COMPOSITION.

1. Write a short composition on "One Day in School." Pick out a definite day and tell what happened. Give only the events which do not ordinarily occur.

2. Write a personal description of yourself, or of some one whom the teacher may select. See (4), first month.

3. Write a paragraph on "Preparing for the Central Examination."

4. Write a paragraph on "Sowing Oats," and tell how it is done so that one who never saw the work would understand.

EIGHTH MONTH.

Review.—Review the verb and all other parts of speech. Learn definitions, forms, and terms thoroughly.

The Expletive.—Its construction in the sentence. Drill on the use of *it, there, and that* as expletives.

ENGLISH COMPOSITION.

1. Write a paragraph on "My Garden—the Seed." Tell what you saved yourself, what you bought, the kinds, their appearances, etc.

2. "My Garden—Planting." Tell how the ground was made ready, how deep and in what special manner you planted each variety of seed.

3. "My Garden—Cultivating." Tell details of looking after the plants and watching them grow.

4. "My Garden—What I Raised." Your garden may or may not turn out well, tell definitely just what the result was.

ARITHMETIC.

This year is devoted to business arithmetic, percentage and its applications, and bookkeeping. In the applications of percentage it is of the highest importance that the pupils understand the elements of the subject to which percentage is applied. Questions in civics and economics must

be investigated. In the work in bookkeeping pupils should use flat cap paper, ruling it as required.

Alternation.—The arithmetic of the seventh and that of the eighth year is arranged to alternate, and following the order of alternation in the other branches the work of the eighth year should be taught during 1897-8, and that of the seventh year during 1898-9, and so continue to alternate from year to year.

FIRST MONTH.

Percentage.—Teach the subject as a case of *fractions*. Use the same forms of analysis. Study the three general problems: To find any per cent of a number, to find what per cent one number is of another, and to find a number when a specified per cent of it is known. Show that these problems are respectively multiplication, measurement, and partition. Show that in each case the percentage problem is more readily solved as a problem in simple fractions, if the rate is an aliquot part of 100. Give many problems of the latter type. Teach pupils to express steps of the solution in a series of equations. Always state "*per cent of what.*"

SECOND MONTH.

Profit and Loss.—Commission and brokerage. Stocks and bonds. Write a stock certificate, a bond. *Stock investments*. See that the difference between shares of stock and bonds is clearly seen.

THIRD MONTH.

Interest.—Teach one method only to beginners. Teach the correct method of finding interval between two dates. Many of our text-books do not teach the method that is legal in Illinois. Partial payments. Discuss and write the various forms of notes, endorsements, etc.

FOURTH MONTH.

Discount.—True discount, bank discount, commercial discount, compound interest. General problems in simple interest.

FIFTH MONTH.

Bookkeeping.—Bookkeeping, cash accounts, account of boy at school, cash account in small businesses. The balance of the cash account should show the amount on hand at any time. Personal accounts, debit and credit, simple accounts with persons in ordinary business and trades. Dictate a few transactions each day. Write checks and drafts—time drafts and sight drafts. Study the arithmetic of these subjects. Exchange. Also show what causes make the rate of exchange at a premium or at a discount.

SIXTH MONTH.

Bookkeeping.—Personal accounts continued for practice and to fix correct ideas of what an account is. Find what the difference between the two sides of a personal account shows. Gain and loss accounts, accounts kept with a small business; as, a field of wheat, a field of corn, a farm, etc. Get an exact notion of the real meaning of an account of this kind.

Taxes.—Study our Illinois tax system. Who levy state tax, county tax, township tax, road and bridge tax, and school tax? The assessor and the various boards of equalization. The county clerk determining the rates and extending the taxes. The collector and the machinery for enforcing payment. Obtain local levies and assessments and calculate taxes, school taxes, road and bridge taxes, etc.





SEVENTH MONTH.

Bookkeeping.—Continue gain and loss accounts. Compare the three kinds of accounts, and fix carefully the exact meaning of each and the results obtained from each. Financial statements and papers. Write notes, checks, receipts, drafts, and make out bills. Write up accounts and draw off statements of the condition of the business. Forms will be found in most text-books. Equation of payments.

EIGHTH MONTH.

Insurance.—Read an *insurance policy*. What determines the rate? Who should *not* insure? Should schoolhouses be insured? The adjuster. Should the full amount of policy be paid in case of total loss?

United States Revenues.—Ad valorem and specific duties—relative advantages. Internal revenues—alcoholic liquors, tobacco, and postal revenues. Partnership.

WRITING—Seventh and Eighth Years.

Business Forms.—Teach not only the forms, but penmanship, English composition, and suitable content of subject matter. Let every lesson be one in penmanship. Teach the features of good vertical writing, which are verticality, simplicity, well rounded letters, short stems and loops, small and simple capitals, and uniform spacing. Teach *one at a time*, and give special attention to paragraphing, indenting, and margins.

Letter Writing.—The necessary requisites of a good letter are: 1. That it should be legible. 2. That it should state definitely where written, when, by whom, and to whom. 3. That it should begin and end courteously and appropriately. 4. That the style should depend upon the relations between the writer and the one to whom he writes, the circumstances under which he writes, and that about which he writes.

Pupils learn to write good English by practice; give them much drill in social and business letter writing.

FIRST MONTH.

Business Letters.—Business letters should, as a rule, be short; but should omit no information necessary to a proper understanding of the business in hand. The meaning should be so clear as to admit no possibility of a misunderstanding. Teach a model form, then furnish data from day to day which pupils may give proper wording and put in form. Include many varieties of letters, pertaining to various kinds of business.

SECOND MONTH.

Social Letters.—Social letters are of various kinds. Adapt the style to the nature of the case, (See 4, under Letter Writing). For examples write: (1) A short note, asking a friend to spend an evening with you; (2) a reply, accepting the invitation; (3) a reply, declining the invitation; (4) a more formal note, introducing a friend to another; (5) a formal invitation in the third person; (6) a petition to a faculty, or some person or persons in authority; (7) a familiar letter of friendship to an old acquaintance.

THIRD MONTH.

Notes.—Distinguish between (1) negotiable and non-negotiable notes; (2) individual and joint notes; (3) time and demand notes; (4) bills receiv-

GEOGRAPHY—SEVENTH YEAR.

able, and bills payable. Teach the meaning of "or order," "or bearer," "maker," "payer," "payee," and "endorser." Show model forms, furnish data, and give pupils practice on all kinds of notes.

FOURTH MONTH.

Receipts and Checks.—Teach *receipts, checks, certificates of deposit, and deposit slips*. From bankers and other business men may be gotten blanks for these forms, possibly enough to supply the class with models. A receipt should state (1) what was received; (2) where; (3) when; (4) of whom; (5) by whom, and (6) on what account.

FIFTH MONTH.

Drafts.—Distinguish sight drafts and time drafts. Teach the meaning of "drawer," "payee," and "drawee." Compare notes and drafts. A note has necessarily two parties, the *maker* and the *payee*; a draft has three parties, the *drawer*, the *payee*, and the *drawee*. Compare an *accepted draft* and a *note*. Show how exchange is carried on by means of drafts.

SIXTH MONTH.

Bills.—Bills may be for goods bought, for services rendered, or for services rendered and for material. Almost every business man has printed bill-heads. Secure blanks, familiarize pupils with forms of bills, and give them practice in writing bills for as many different kinds of business as practicable.

Cash Account.—Teach the form of an account, the purpose of a cash account, the principle of debiting and crediting, and the method of balancing. Teach pupils to do neat ruling and to keep their columns of figures straight.

SEVENTH MONTH.

Personal Accounts.—Personal accounts, merchandise accounts, and the daybook.

EIGHTH MONTH.

Review.—Review work of the year, giving special attention to business correspondence.

GEOGRAPHY.

For the Teacher.—Before attempting to teach this work the teacher himself should know it. At least he should read it through carefully, and if he finds that there are some things in it that he does not fully understand, let him go to work and master them. He will find this course more profitable, both for himself and his pupils, than to waste time in growling about the "difficulty" of the work. The work is not difficult, at least it is not too difficult for the pupils to master, if the teacher knows it and has studied how to present it to the best advantage. Besides, work that is not somewhat difficult is of little worth. It does not promote growth. Time spent upon it is time wasted, and the children's time is too precious to be spent for naught. This work is intended to call forth a reasonable amount of effort, on the part of teacher and pupils. That is all.

Alternation.—The geography for seventh and eighth years is arranged to alternate. Following the order of alternation of the Course of 1894, have a class in eighth year geography during 1897-8, and in seventh year geography during 1898-9, and so continue to alternate.





FIRST MONTH.

Mathematical and Astronomical Geography.—Define point, line, surface, plane, circle, circumference, arc, radius, diameter, solid (physical and mathematical), sphere. Form of the earth; six proofs of its rotundity. Proofs of the earth's rotation, direction of rotation, time, relation of rotation to day and night. Define earth's axis (show difference between axis and axle), poles, equator, parallels, meridians, latitude, longitude, great circle of a sphere, small circle.

Define oblate spheroid. Give four proofs of the earth's oblateness. How much shorter is the polar diameter than the equatorial? What would be the "flattening" at each pole of a twelve-inch globe if "flattened" in the same proportion as the earth? Circumference of the earth at the equator? At parallel 60? Velocity of places on the equator due to the rotation of the earth on its axis? Length of time required to walk around the earth, walking thirty miles a day?

What is the earth's orbit? Its shape? Plane of the earth's orbit? Other name for this? It always passes through what two points? Draw diagram of the earth's orbit, mark and name four principal points in the orbit, and give meaning of names. When is the earth at each of these points? Between which two is it to-day? In what time does the earth make a revolution around the sun? Relation of this revolution to the change of seasons? How far is the earth from the sun?

What are the tropics? Number? Why in their present position? What are the polar circles? Why in their present position? Were the axis of the earth perpendicular to the plane of its orbit, where would the tropics be? The polar circles? Were it declined 45 degrees from a perpendicular, where would the tropics be? The polar circles? What would then be the width of each zone? What is the width now? Were the axis declined as above supposed, how would the winters in Illinois compare with the winters now? The summers? Why so? Would the change be a desirable one? Why? Do you see how much is determined by the declination of the earth's axis from a perpendicular to the plane of its orbit? What?

SECOND MONTH.

Mathematical Geography Continued.—The sun always shines on half of the earth. The great circle of the earth that separates the illuminated half from the half in darkness is the day circle, or circle of light. Were the axis of the earth perpendicular to the plane of its orbit, the day circle would always pass through what two points? Were the axis declined 35 degrees from a perpendicular to the plane of its orbit, how far would the day circle move from the poles? How far does it move now? Which has the longer day in summer, St. Paul or the City of Mexico? Which has the longer day in winter? Why so?

The vertical line of any observer always passes through what two points? Define each of these points, also the vertical line. What is the horizon (Distinguish between the visible horizon and the mathematical)? One's vertical line is always how related to his mathematical horizon? The mathematical horizon of an observer at the equator passes through what two points? The mathematical horizon of an observer at either pole would coincide with what great circle of the earth?

Since it takes the earth twenty-four hours to rotate on its axis, through how many degrees will any point on its surface pass in one hour? In three hours? In fifteen minutes? In one minute? Four minutes? The difference in longitude between two places is ten degrees, what is the difference in time? What is the difference in time, if the difference in longitude is twelve degrees? Twenty minutes? etc.

North America.—*Position*, including boundaries and latitude and longitude.

Size.—Rank compared with the other continents. Area in square miles. How many farms of a quarter section each would it make?

Shape.—What continents resemble it in shape? The longest side? The shortest?

Outline or Contour.—The principal projections and indentations? Do not teach every little twist and turn of the coast. Confine your efforts to what is important. Be wise in selecting. Much time is wasted on non-essentials.

Surface or Relief.—Make three divisions—plains, plateaus, mountains. Name and locate the three great systems of highlands, a few of the more important ranges in the Atlantic and Pacific highlands, and a few of the highest peaks. Do not assign a place to be learned simply because it is in the book; have a better reason. Think out why it was put in the book. Notice that in the Americas the highlands are along the border, the plains in the interior.

THIRD MONTH.

North America Continued.—*Drainage*.—Divide the continent into slopes and basins—as the Atlantic slope, the Pacific slope, the Arctic slope; the St. Lawrence basin, the Mississippi basin, the Rio Grande basin, the Colorado basin, and the Utah basin. Locate these on the wall-map and point out the “divides” or water-partings that separate them. Give one or more of the principal rivers in each, tell where it rises, the direction in which it flows, and what it flows into. Remember that you can take but a few rivers at most, and that size does not always make a river important. The Concord, Merrimac, and Chickahominy rivers are small, yet they are very important to American children.

Again, do not teach too many rivers. A pupil's knowledge of geography can not be justly measured by the number of places which he can name and locate. Be strong enough to confine your teaching to that which is important. Teach well what you undertake.

Climate.—Temperature and moisture. The temperature is affected by distance from the equator, by elevation above sea level, and by local causes. Give illustrations. Moisture is affected by the situation of a place with reference to the sea coast, the mountains, by the direction of the prevailing winds, and by local causes. Give illustrations.

Vegetation.—Show the influence of climate upon vegetation. Which forms thrive best on low, wet lands? Which on dry up-lands? Can the children name all the trees that grow within a mile of the schoolhouse? Can the teacher? Why not? Can they tell which is the most useful? Can they name all the wild flowers in their neighborhood? Can the





teacher? Use the vegetation of the home neighborhood as the key to a knowledge of the vegetation of the continent. Teach the trees and cultivated products of the different parts of the continent, dwelling on their comparative importance.

Animals.—Domestic and wild. The usefulness of the different domestic animals. The wild animals, size, habits, usefulness. Let the children name and describe the animals they saw in the circus parade, or in the menagerie. Be sure to show the influence of climate on both vegetable and animal life, and the dependence of climate on latitude and altitude; so your pupils may see the causal relation running through the work.

Man.—The different races dwelling in North America at present. Occupations—such as agriculture, manufactures, mining, commerce, lumbering, and fishing; and the part of the continent in which each is carried on to the greatest extent.

Political Divisions.—Give countries only. Compare them in several respects. In following the outline use the text-book freely, especially the pictures. If you have reference books, be sure to designate the volume and page, and even the paragraph to which your pupils are to refer. Much time is wasted by children in using reference books.

Write the above plan on the blackboard where the pupils can see it daily until it becomes fixed in their minds. Call attention frequently to the relation of the topics to each other. Geography should be largely a study of relations.

FOURTH MONTH.

United States.—Teach the United States as a whole following the plan for the study of North America. Teach ten of the principal lines of railroads, a few of the more important canals, and the ten largest cities, showing as far as possible to what they owe their growth and importance. Make a special study of Washington and New York, and review carefully what was taught in the fifth year about Chicago, adding such facts as you deem best.

Government Land Survey.—Explain the method of describing land in the government survey. Where does the first principal meridian start? The second? Third? Fourth? Where does its base line cross each of these meridians? What are correction lines? Need of such lines? How frequently do they occur? What part of Illinois described by reference to the second principal meridian? The Third? Fourth? Which is the school section? Describe the section on which your school-house stands.

FIFTH MONTH.

The New England States.—Study as a whole first, following the plan for the study of the continent as far as practicable. [This suggestion should be followed also in studying other groups of states.] Show why New England is so extensively engaged in manufacturing. When you have taught all you care to teach about the surface, drainage, climate, soil, and industries, such as lumbering, quarrying, agriculture, fishing, manufacturing, etc., locate these cities telling for what each is noted; Bangor, Augusta, Waterville, Portland, Portsmouth, Lawrence, Lowell,

Manchester, Concord (N. H.), Concord (Mass.), Lexington, Salem, Boston, Cambridge, Plymouth, Fall River, Newport, Providence, Worcester, Hartford, Springfield, New Haven, Waterbury, Rutland, Burlington, and Montpelier. If the city is noted in history, give the events. If it is a commercial center, give the principal exports and imports; if it is a manufacturing center, name the principal articles manufactured. This is a good place to teach the value of skilled labor. New England imports the raw material and exports the manufactured products.

In like manner teach the South Atlantic and Middle Atlantic States, selecting as many of the most important cities as time will permit. Dwell on the chief industries, showing why the people are engaged in these instead of in others.

SIXTH MONTH.

Teach the Gulf States, with Tennessee, Kentucky, and the North Central States east of the Mississippi river.

SEVENTH MONTH.

Teach all states not taught, and the territories. Give three or four of the leading differences between a State and a Territory, and show wherein the Indian Territory differs from the others.

Teach a few facts about the Dominion of Canada, telling about its extent, resources, government, etc. Name the Provinces in order and give their capitals.

EIGHTH MONTH.

Spanish-American Countries.—Teach the position, surface, climate, productions, and government of Mexico. Name and locate four of its principal cities, telling what you can about each of them. Central America and the West Indies should not receive as much time and attention as Mexico.

South America.—Study South America as a whole following the plan for the study of North America, but not entering quite as much into details. Dwell especially on the basins of the Orinoco, Amazon, and Rio de la Plata, giving their products both natural and cultivated. Make clear to the children why there is so much rain on the east side of the Andes in equatorial South America and so little on the west side, while in the southern part of the continent the most rain is on the west side. Show also that altitude has more to do than latitude in determining climate, and consequently vegetable and animal life in this continent. At the same time you must be careful not to give the impression that latitude is to be ignored; it counts for much, even in South America. Teach about the people, their race, language, homes, education, government, occupations, etc.

Name in order the countries of South America, giving their capitals, and telling what their chief exports are. Make a special study of Para, Rio Janeiro, Buenos Ayres, Valparaiso, Guayaquil, Panama, and La Guayra. Tell about the Panama canal.



CONTENTS
ORIGINAL ARTICLES
The Effect of the Diet on the Blood Sugar in the Normal Individual
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THE EFFECT OF THE DIET ON THE BLOOD SUGAR IN THE NORMAL INDIVIDUAL
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UNITED STATES HISTORY.

The study of history is the study of the progress of our race. History is interesting as a romance. It may not be as eccentric as fiction, but it is quite as entertaining, quite as stimulating to imagination, and far more strengthening to memory and judgment. Its study cultivates the reason, making people wise and energetic. The education of the "heroic age" in every nation has been the recounting and the learning of the worthy, the noble and inspiring words and works of its great men. In history, youth have ideals placed vividly before their vision, and they choose, according to their aptitude, the best examples for their guidance and emulation.

The course of human events is not one of uninterrupted progress, and the helpful effect of a nation's intelligence and morality, and the disaster caused by its immorality may be read on every page. But the book and the teacher should not, by dwelling on the immorality too much, lift it into a degree of importance which would give it a respectability that would encourage its imitation by weaker minds.

Let the noble and elevating thoughts and deeds of our honored countrymen, whether expressed in daily life, in word, in invention, in the economic arts, or in the heroic struggles to secure and perpetuate the rights of men—grand, elevating achievement,—be the subject-matter which the youth of our schools shall be encouraged to study in United States History. Let us study the things which promote peace and progress.

DIRECTIONS.

1. It is the purpose of this outline to present some *central topics* for each month. These topics are printed in bold-faced type at the extreme left. Thus, in the first month the topics are *Preparatory Study* and *Discoveries*.

2. Under these *central topics* will be found sub-topics. These follow one another, mainly in chronological order.

3. The *summary* presents the chief thoughts found in each month's work. These are the things to be fixed by drill.

4. The *review* is intended to occupy about two days at the close of the month.

5. The *examination* should occupy one day, and it may be oral—the pupils drawing well prepared questions—or written. If written, the pupil should have time to present a neat, well written paper.

6. If maps are not at hand, the pupils should construct maps. Never teach a lesson without maps at hand. The fundamental notions in History are *time, place, and men*.

Alternation.—The history of the seventh and eighth years is planned to alternate. As this alternation began with the Course of 1894, the history of the eighth year should be taught during 1897-8, that of the seventh year during 1898-9, and so continue to alternate.

FIRST MONTH.

Preparatory Study.—Pupils should make a map of Europe, Asia, and Africa. On this map trace with colored pencil the commercial routes between western Europe and southern Asia. In addition to the matter found in the text, on the following subjects, the teacher will give carefully

prepared talks on Crusades, Maritime enterprise, Marco Polo, Geographical knowledge, Northmen, Printing-press, Reformation, Revival of learning, Consolidation of governments. Pupils will take notes on these talks and return the facts in either the oral recitation or written exercises. Trace on the map the career of Columbus from his birth in Genoa to his departure from Palos.

Discoveries.—Pupils should make a map of Atlantic Ocean with eastern coast of the Americas and the western coast of Europe and Africa. Show routes the Portuguese took to reach India. Trace Columbus in his voyages from Spain to North, and South America. Explain the Pope's division of the world. The Cabots first touch North America. The naming of America.

Summary.—1. Commercial activity of western Europe. 2. Social, political, and religious condition of western Europe. 3. Columbus's preparation for his great undertaking. 4. Rivalry between Spain and Portugal. 5. England's lethargy and awakening.

Review. Examination.

SECOND MONTH.

Spanish Explorations and Discoveries.—Conquest and colonization of the West Indies. Ponce de Leon in Florida, Balboa and the South Sea. Narvaez's unfortunate expedition. De Soto's discovery. Conflict of the Spaniards with the Huguenots in Florida. Other Spanish explorations.

English Explorations and Discoveries.—Review voyages of the Cabots. Why the English were inactive. Frobisher's search for north-west passage. Gilbert. Drake. Raleigh's attempts to settle Roanoke. The lost colony.

French Explorations and Discoveries.—Jean Ribaut settles Port Royal under patronage of Admiral Coligny. Cartier's discovery of the St. Lawrence.

The New World.—(North America.) Its extent compared with European countries. Natural resources. Rivers, lakes, and coast indentations. Climate. Adaptation to occupancy by civilized man. Its inhabitants.—Degree of civilization as indicated by cultivation of the soil; farming and other implements; domestic utensils; social and moral qualities; methods of warfare; religious notions; forms of government; number, and tribal distinctions.

Reflections.—(Resulting good from Discovery of America.) Increase of geographical knowledge. An outlet for European energy. Riches of the New World enhance progress in the Old. Leads to mastery of the science of navigation. Cheapened living for European peasants. It led to the establishment of free governments. It resulted in the spread of Christianity.

Summary.—1. Spain's explorations were in the south. 2. England's, in the central eastern part. 3. France's, in the St. Lawrence Valley. 4. The New World as found by Europeans. 5. Reflections.

Review. Examination.

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THIRD MONTH.

Permanent Settlements.—Pupils will prepare a map of the Atlantic States to be completed as the work of settlements proceeds.

Virginia.—1607. The London and Plymouth companies. Provisions of the Charters. Settlement of Jamestown. Sufferings. Smith. Culture of tobacco. First General Assembly, 1619. This was the first representative government. Slavery. Coming of the Cavaliers. Berkeley's rule. Navigation laws. Bacon's Rebellion.

New York.—1614. Hudson—his reception to the Manhattan Indians. Dutch occupancy of the Hudson valley. Patroons. The Dutch governors. Transfer to the Duke of York.

Summary.—1. Basis of English claim to this territory. 2. Charters and consequent changes in government. 3. Sufferings of the colonists. 4. The curse of slavery. 5. Tyranny of Berkeley. 6. The Dutch in the New World.

Review. Examination.

FOURTH MONTH.

Massachusetts.—1620. Failure of the Plymouth company. Status of religious worship in England. Study carefully the words Separatists, Puritans, Pilgrims, Cavaliers, as applied to the people of this period. Landing of the Pilgrims. The Town-meeting. (This is very significant). Contrast with House of Burgesses in Virginia. Salem and intolerance. Settlement of Boston. Transfer of the Plymouth company to the New World. Legislature or General Court. Banishments. Harvard. Eliot's work. The New England Confederacy, 1643. Its objects. Persecution of the Quakers. King Philip's War. Salem Witchcraft. Massachusetts a royal province. Gov. Andros.

New Hampshire.—1623. Grant to Gorges and Mason. Division of the territory. Union with Massachusetts.

Summary.—1. Distinction of terms. 2. The Town-meeting, a pure Democracy. 3. Transfer of Plymouth company to the New World. 4. Religious intolerance in the Massachusetts colonies. 5. Founding public schools—higher education. 6. The New England Confederacy. 7. Conflict with Royalty. 8. Relation of New Hampshire with Massachusetts.

Review. Examination.

FIFTH MONTH.

Connecticut.—1634. Contest between the Dutch of New York and the English of Massachusetts for possession. Settlement by Winthrop and Hooker. Pequot War. Union of Hartford, Wethersfield, and Windsor. New Haven. Conflict with Royalty. Charter Oak.

Maryland.—1634. Objects in founding the colony. Freedom. Loss of Maryland to the Catholics. Restoration of Maryland to the fourth Lord Baltimore. Mason and Dixon's survey.

Rhode Island.—1636. Williams's banishment and settlement of Providence. Rapid growth—why? Settlements at Portsmouth and Newport. The charter.

Delaware.—1638. Settlement by Swedes. Conquest by Dutch, and then by the English. Sale to Penn.

Summary.—1. Occupancy, the basis of right of possession. 2. Spirit of the Hartford Constitution. 3. Charter by Charles II. 4. English Catholicism in America. 5. Mason and Dixon's line dividing the free and the slave states. 6. Growth of the "Liberty of Conscience." 7. Attempt to found New Sweden.

Review. Examination.

SIXTH MONTH.

The Carolinas.—1663. The grant of Charles II. Character of the colonists. The Grand Model. Failure; why? Culture of rice, indigo, and cotton.

New Jersey.—1617. Dutch claim of the territory between the Hudson and the Delaware River. Possession taken by English, and settlement of Elizabethtown. Purchase by Friends. Change in form of government.

Pennsylvania.—1681. The grant to Penn. Settlement of Philadelphia. Religious and political freedom—basis of government. Treaty with the Indians. Growth of Philadelphia.

Georgia.—1783. Oglethorpe's Plan. Character of the settlers. Silk culture. Prohibitory laws. Wesley. Whitefield. Conflict with Spaniards of Florida.

French Explorations.—Explorations of the Jesuits around the lakes. Joliet and Marquette discover the Illinois and the Mississippi. LaSalle takes possession of the interior in the name of the French King. Founding of Mobile and New Orleans by the French.

Summary.—1. Failure of Locke's Feudal system. 2. Industries of the Carolinas. 3. Popular government in Pennsylvania. 4. Growth of a great city. 5. Benevolence of Oglethorpe. 6. Restrictive laws in Georgia. 7. Activity of the French.

Review. Examination.

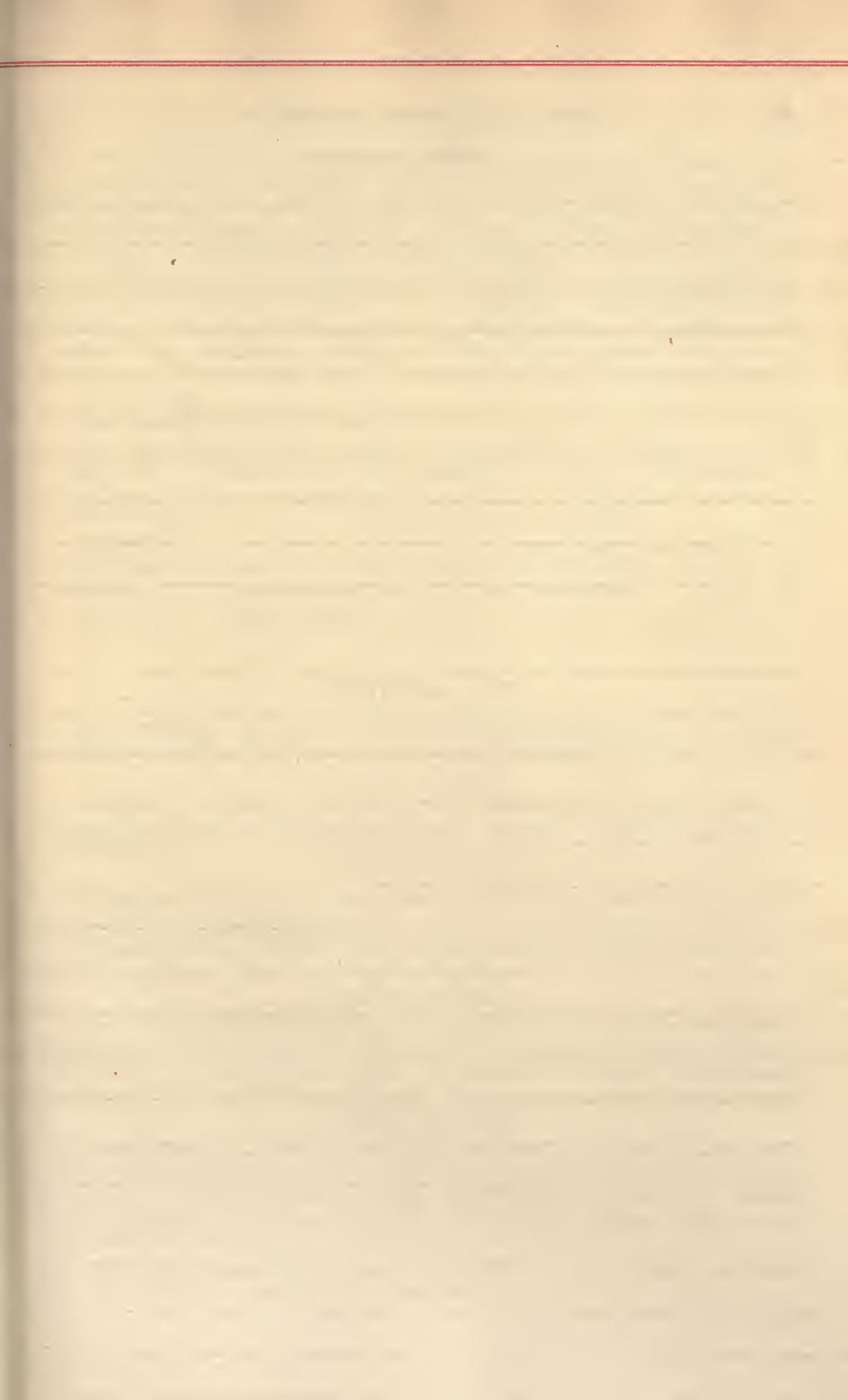
SEVENTH MONTH.

Claims to Territory.—English hold the Atlantic coast from Maine to Florida. Their claims extend west to the Mississippi river. Spaniards hold Florida, the West Indies, Mexico and the majority of Central and South America. French hold the St. Lawrence river and adjacent territory; the country near the Great Lakes; and the Mississippi valley and east to the Alleghany Mountains. The Dutch and Swedes have been dispossessed by the English.

Four French and Indian Wars with the English.—King William's War, 1689—1697. Schenectady. Haverhill. Port Royal. Queen Anne's War, 1702—1713. Deerfield. Port Royal. Nova Scotia. King George's War, 1744—1748. Capture of Louisburg. French and Indian War, 1754—1763. Encroachment of the French on the Ohio. Washington's message. Albany Convention. Braddock's effort to drive out the French. The English capture New Brunswick. Pitt. The English capture Ft. Du Quesne. Fall of Quebec. Treaty conditions.

General Review.—1. Name the thirteen colonies. 2. Distribution of population. 3. Social life in the colonies. 4. Education among the people. 5. Material improvements—roads, bridges, public buildings, etc. 6. Commerce. Products imported and exported. 7. Forms of colonial governments: (a) Royal; (b) Charter; (c) Proprietary. 8. How laws were made. 9. Interference in domestic affairs by the English government.

Examination.





EIGHTH MONTH.

Revolutionary Period.—Pupils will make a list of the causes of the Revolution and discuss each cause fully. First Continental Congress.

The War Begun.—Lexington and Concord. The second Continental Congress. (See that pupils have the right notions of the make-up of these congresses, and of their power.) Bunker Hill. Washington drives the British from Boston. Attack on Fort Moultrie. Declaration of Independence. Washington's campaigns for the defense of New York and Philadelphia. Burgoyne's invasion. Howe's retreat across New Jersey. Monmouth. War in the South. Arnold's treason. Capture of Cornwallis. Treaty.

Government of the Colonies.—From July 4, 1776, to March 2, 1781, the thirteen colonies had no Federal Government. From March 2, 1781, to April 30, 1789, the colonies were under the Articles of Confederation. From April 30, 1789, to the present time we have lived under the Constitution. Ordinance of 1787. The Constitutional Convention.

Summary.—1. Causes of the war. 2. The struggle for New York, Boston, and Philadelphia. 3. The treaty with England. 4. Forms of government. 5. Northwest territory. 6. The Constitution.

Review. Examination.

PHYSIOLOGY.

Alternation.—The work in physiology given below and the work in civics is arranged to alternate. During 1897-8 teach civics as given in the eighth year, and during 1898-9 teach physiology given below, and so continue to alternate.

FIRST MONTH.

Bones.—Use book. Define anatomy, physiology, hygiene. Cells. Bones—structure, uses, kinds, composition. Joints. Ligaments. Hygiene of bones.

SECOND MONTH.

Muscles.—Number, purpose, kinds, structure, contraction. Hygiene of muscles. Alcohol and muscle.

Food.—Kinds, cooking. Water should be pure. Cooking necessary; ways of cooking. What and how we should eat.

THIRD MONTH.

Ventilation, Bathing, Etc.—Pure air, avoid currents, disinfectants, contagion. Sleep—necessity; early to bed. Kidneys. The skin—structure, sweat glands, oil glands. Hair. Bathing—why, when. Temperature of body. Clothing—kinds, uses, etc. Effects of alcohol on temperature.

FOURTH MONTH.

The Blood.—Circulation, amount, composition, kinds—arterial and venous. Pulmonary artery. Clotting of blood. The heart—position, structure, course of blood through, movements, and rest of. Pulse, arteries, veins, capillaries, structure, differences. Effects of narcotics and stimulants on heart and circulation.

Respiration.—Larynx, epiglottis, trachea, pleura, lungs. How we breathe, why we breathe, how to breathe.

FIFTH MONTH.

Digestion.—Necessity for food; alimentary canal; mastication; teeth; saliva and its uses; stomach; gastric juice; hygiene of stomach. Liver; bile; pancreas. Fluids concerned in digestion. Conditions of a good digestion. Effects of alcohol, tobacco, and opium on the digestive organs. Absorption; villi; portal vein; thoracic duct; lymphatic glands. How the digested foods enter the circulation. Lymphatics.

SIXTH MONTH.

Nervous System.—Brain—white and gray matter, cerebrum, cerebellum, medulla oblongata. Spinal cord. Nerves. Reflex action. Effects of narcotics and stimulants.

SEVENTH MONTH.

The Senses.—Sense of sight; eye well protected; oil glands, tears, eyeball. How we see. Care of eyes. Sense of taste. Sense of smell. Sense of touch. Sense of hearing. Structure of ear.

EIGHTH MONTH.

Review.—Review the work of the year.

EIGHTH YEAR.

TEXT-BOOKS.—Fifth Reader, Advanced Grammar, Arithmetic, Geography, History, and Civics.

READING.—Fifth reader or equivalent in literature.

ORTHOGRAPHY.—Rules, terms, etc.

GRAMMAR AND COMPOSITION.—Syntax and practical composition.

ARITHMETIC.—Mensuration.

WRITING.—See seventh year.

GEOGRAPHY.—Europe, Asia, Africa.

HISTORY.—Complete administrations.

CIVICS.—General principles, State and Nation.

SCIENCE.—See "Observation Work."

GENERAL EXERCISES.—Music, Drawing, Morals and Manners.

READING.

Fifth reader finished and reviewed. For suggestions see seventh year.

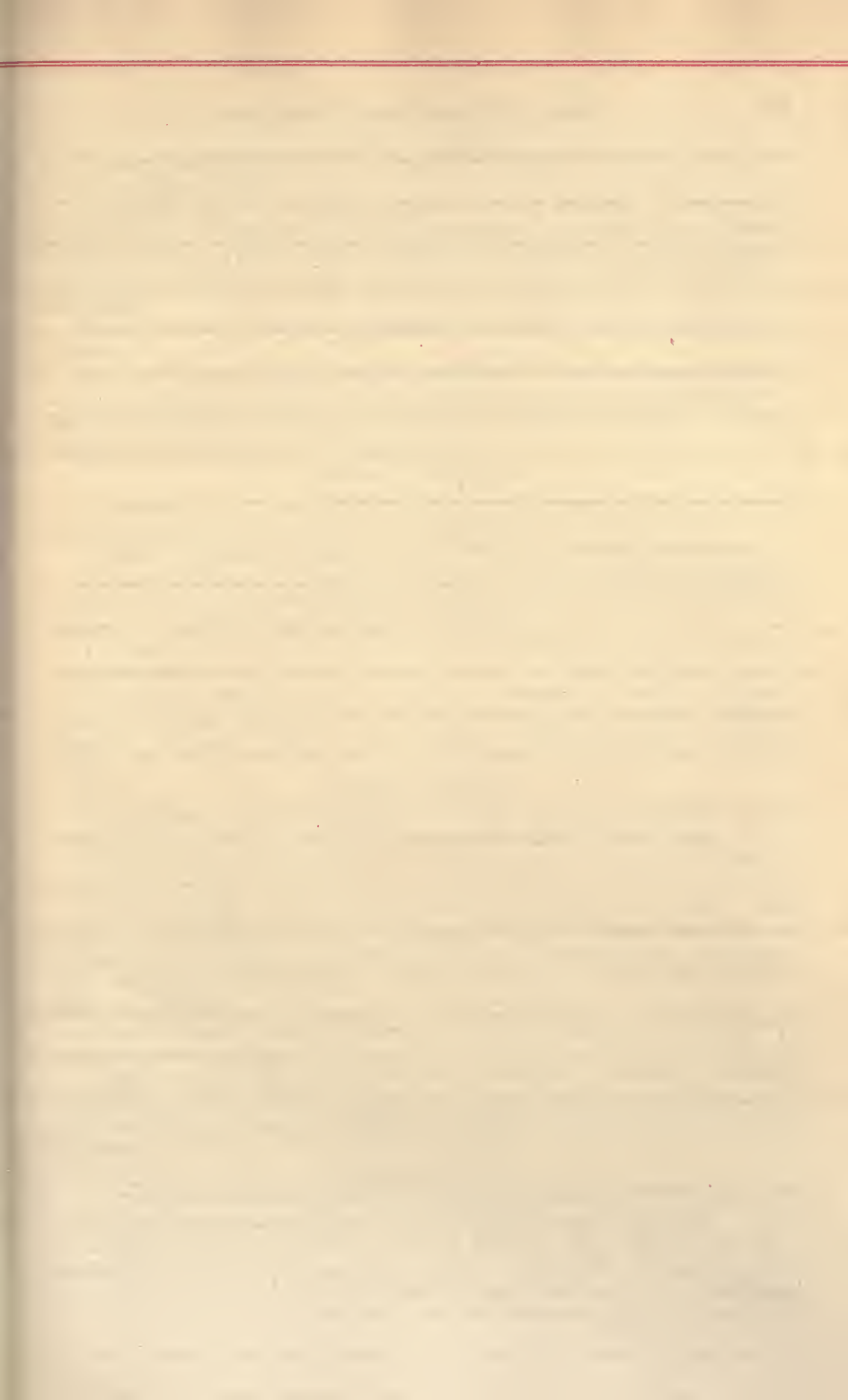
Supplementary Reading.—The following books are recommended for this grade: Lowell's *Vision of Sir Launfal and Other Poems*, (Houghton, Mifflin & Co.); Lincoln's *Gettysburg Speech*, (Houghton, Mifflin & Co.); Emerson's *Fortune of the Republic*, (Houghton, Mifflin & Co.); Scott's *Ivanhoe*; Burke's *American Orations*, (Maynard, Merrill & Co.); Rolfe's *Selections from English History in Prose and Verse*, (Harper Bros.); Shakespeare's *Julius Cæsar*, (American Book Co.)

ORTHOGRAPHY.

Alternation.—Read the suggestions at the head of orthography for seventh year, also at the head of spelling for fifth year. The work given below is arranged to alternate with orthography for seventh year, and should be taught during 1897-8, and each alternate year thereafter.

FIRST MONTH.

1. Pronounce and spell technical and difficult words that appear in the lessons of the month in grammar, arithmetic, geography, history, and civics.





2. Select and define a list of words containing *voc* or *voke* (to call); as, invoke, revoke, provoke.

3. Syllable defined. Spoken syllable, written syllable. Purposes of syllabication; to indicate correct pronunciation, (prevails in the United States); to show origin of words, (prevails in England). Names of syllables; initial, ultimate or final, penultimate, antepenultimate, preantepenultimate.

4. Write a list of words to show that "*D* is silent before *g* in the same syllable."

5. Pronunciation and diacritical markings of the following words: absolve, acclimated, acoustics, adept, adhesion, adverse, aeriform, aeronaut, alibi, alternate, analogous, annihilate, apropos, archangel, aroma, audacious, balm, bequeath, biology, buoy.

SECOND MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, history, and civics.

2. Study words containing *vene* (to come); as, convene, intervene.

3. Accent defined. Primary and secondary accent, and how marked. General principles for placing accent. Make a list of words in which a change in accent will make a change in meaning.

4. Write a list of words to show that, "*G* is silent before *m* or *n* in the same syllable."

5. Mark diacritically and pronounce: burlesque, cabal, caldron, caprice, carmine, carotid, cavi, chaotic, chasten, chastisement, chattel, cherubim, chimera, chlorine, chyle, chyme, cinchona, clangor, codicil, codify.

THIRD MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, history, and civics.

2. Study words containing *fer* (to bring or bear); as, transfer, refer, infer.

3. Word defined. As to form words are either simple or compound. Use of hyphen in compound words. As to origin words are either primitive or derivative. As to number of syllables words are monosyllables, dissyllables, trisyllables, polysyllables. Parts of a word; root, prefix, suffix. Definition of affix.

4. Write a list of words to show that, "*H* is silent when it follows *g* or *r* in the same syllable."

5. Mark diacritically and pronounce: complex, contour, corridor, corpuscle, covetous, critique, culinary, curator, daunt, debut, decorous, defalcate, delusion, demise, designate, desist, despicable, diastole, drivel, dysentery.

FOURTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, history, and civics.

2. Study words containing *pend* (to hang): as, suspend, depend, append.

3. Write a list of words to illustrate the principle that, "*I* constituting

or ending an unaccented syllable not initial, is always short, and is usually short even in initial syllables, if unaccented."

4. Write a list of words to show that, "*K* is silent before *n* in the same syllable."

5. Mark diacritically and pronounce: dyspepsia, encore, enervate, epoch, equation, exaggerate, exhale, exorbitant, exponent, extempore, extol, facade, fetich, financial, florid, franchise, garrulous, gaseous, gluten, grovel.

FIFTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, history, and civics.

2. Study words containing *flect* (to bend); as, inflect, reflect, deflect.

3. Write a list of words to show that, "*E* before terminal *n* should always be silent in participles, and also in most other words."

4. Write a list of words to show that, "*N* final after *l* or *m* is silent."

5. Mark diacritically and pronounce: hostage, hypocrisy, incisor, incomparable, institute, isolate, legislature, lichen, maelstrom, menagerie, marigold, maritime, mistletoe, moccasin, model, mustache, nasal, neutral, nuptial, obstacle.

SIXTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, history, and civics.

2. Study words containing *fect* or *fact* (to make); as, defect, infect, factor.

3. Write a list of words to show that, "*E* before terminal *l* should usually be sounded."

4. Write a list of words to show that, "*T* is silent before *ch* in the same syllable."

5. Mark diacritically and pronounce: onyx, orchestra, oxide, papaw, parquet, parotid, pique, porcelain, profuse, prophecy, prophesy, pylorus, quarantine, quotient, rational, rendezvous, resource, reverie, saline.

SEVENTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, history, and civics.

2. Study words containing *fuse* (to pour; as, transfuse, infuse).

3. Write a list of words to show that, "In most words *i* before terminal *l* or *n* should be sounded."

4. Write a list of words to show that "*W* is silent before *r* in the same syllable."

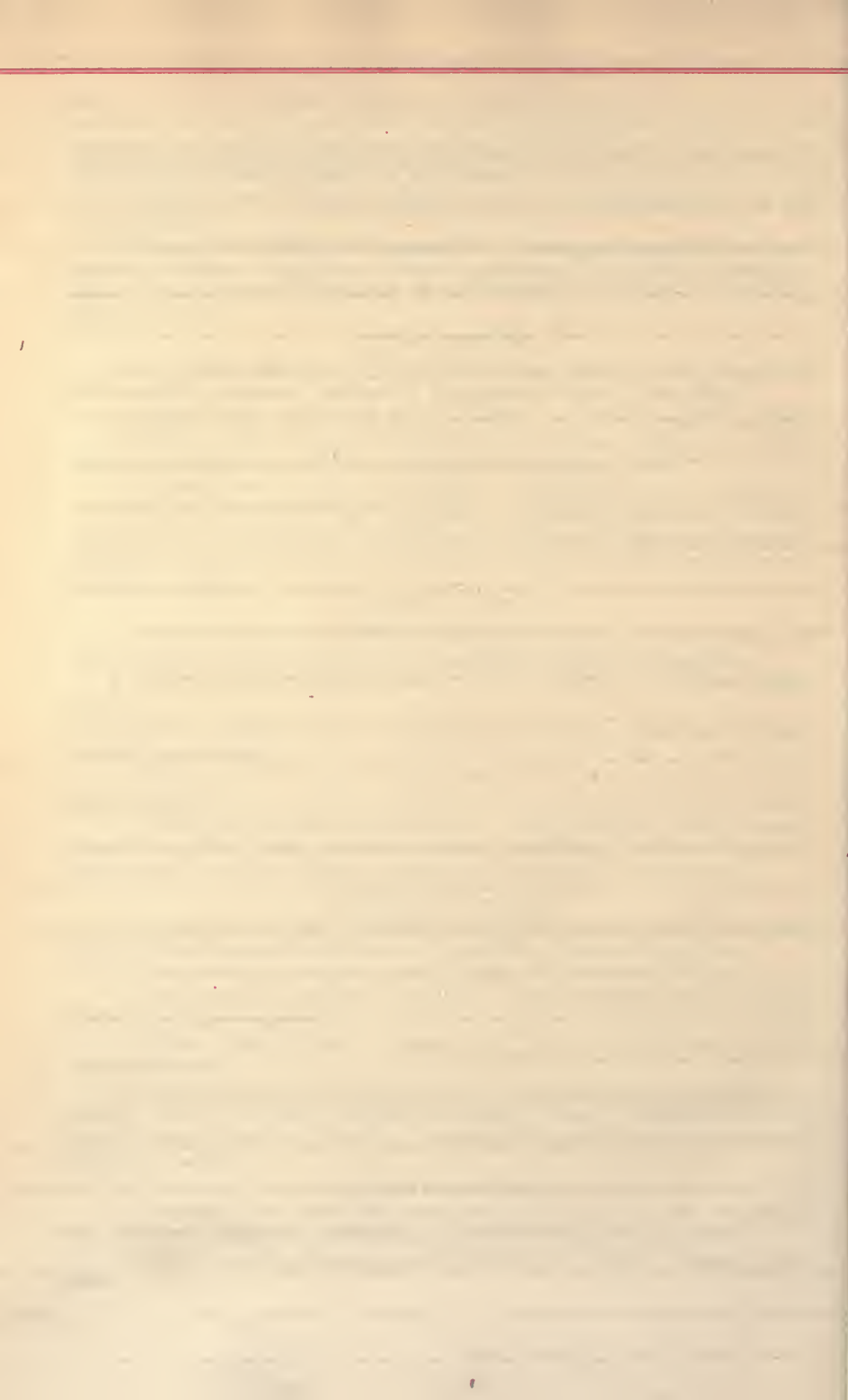
5. Mark diacritically and pronounce: sanguine, sardine, sarsaparilla, satire, satirist, schism, sedentary, seraph, siesta, silhouette, simoon, simultaneous, sinecure, sobriquet, souvenir, squalid, squalor, stupendous, subpena, subtle.

EIGHTH MONTH.

1. Pronounce and spell difficult words that appear in the lessons of the month in grammar, arithmetic, geography, history, and civics.

2. Study words containing *spect* (to look); as, expect, inspect, prospect.





3. Write a list of words to show that, “*I* accented in most words from the French has the sound of long *e*.”

4. Write a list of words to show that, “*Gh* is always silent after *i*, and, when not a substitute for *f* or *k*, is also silent after *au* and *ou*.”

5. Mark diacritically and pronounce: suffice, sunac, suture, syncope, systole, tabernacle, tapestry, teutonic, tortoise, tournament, trachea, tribune, tympanum, tyrannic, unique, unison, usurp, vicar, vignette, virulent.

GRAMMAR AND COMPOSITION.

Alternation.—The grammar and composition of the seventh and eighth years is arranged to alternate, and that the alternation which began in grammar in 1894 may be continued, the work here given should be studied during 1897-8, that of the seventh year during 1898-9, and so continue to alternate from year to year. Read what is said about English composition at the head of this subject in seventh year.

ENGLISH COMPOSITION.

Every piece of composition may have one or all of the three essential qualities of style, viz.; *clearness*, *force*, and *elegance*. The pupil should be taught to recognize these qualities in anything that he reads. (1) The selection that has *clearness* we understand; (2) the selection that has *force* holds our attention; (3) the selection that has *elegance* pleases us. The qualities of style are relative, then, and dependent upon our mental development and taste.

Pupils should be taught that they write to communicate their thoughts *to others* and what is clear, or attractive, or pleasing to the writer may not of necessity be so to the reader.

The subjects presented here are almost wholly narration or description, since these are the two forms of discourse which young pupils can handle best. While practicing on these the teacher should not neglect the material suggested for the preceding year's work.

FIRST MONTH.

Nouns, Pronouns, and Verbs.—Review cases of nouns and pronouns. Study declensions. Practice in readers. Review the whole of the verb. Conjugate a few irregular verbs with three unlike principal parts and note their uses. Practice making written synopses. Review the adverb.

ENGLISH COMPOSITION.

1. Write an application for a position as clerk to John I. Helton, Loda, Illinois, stating your experience and other preparation. Date on the first two lines at the right, his name and address on the next two at the left, and “Dear Sir,—” on the fifth line underneath the address. End the letter with “Very respectfully yours,” and your name.

2. Write a paragraph on “My Ideal Man,” giving the specific characteristics of some man whom you know and whom you consider an ideal.

3. Answer the letter in (1) and give reasons why you can not accept the applicant. Date and address the same as in (1). End this “Very truly yours,” and your name.

4. Write a paragraph on “My Ideal Woman,” giving the specific characteristics of some woman whom you know and whom you consider an ideal.

SECOND MONTH.

Analysis of Sentences.—Review first month's work of last year. Analyze and diagram sentences. Study classification of, according to use. Search readers and text-book till classification is easy to pupils. Classify as to form. Study the complex sentence carefully. Subordinate propositions are joined to principal ones by relative pronouns, by subordinate conjunctions, and by conjunctive adverbs. Review classes of conjunctions.

ENGLISH COMPOSITION.

1. Write a formal note of invitation. Begin this note with your own name and write it all in the third person. Do not sign such a note. Put the date in the lower left hand corner.

2. Write a description of any game you have played at school. Tell the things that would enable any one who is not acquainted with the game to understand it.

3. Write an acceptance of the invitation (1) above, following the same directions given there.

4. Give an account of some time when you have played the game described in (2), and try to show the progress from beginning to end. Name the players and be specific throughout.

THIRD MONTH.

Elements of Sentences.—Define subordinate element. Three classes of modifiers—objective, adjective, and adverbial. Independent elements. Classify elements found in a reading lesson into these and learn definitions. Be careful to study all the text-book says about modifiers. Find three kinds in each of the above divisions, viz.: elements of the first, second, and third classes, or words, phrases, and clauses. Define phrase and clause. Classify phrases into substantive (subject, predicate, or object), adjective, and adverbial. Study all these and classify phrases in reading lesson. Separate clauses into principal and subordinate. Study subordinate clauses as substantive (subject, predicate, or object), adjective (relative or appositive), interrogative, and adverbial clauses. Search readers for many illustrations.

ENGLISH COMPOSITION.

1. Write a paragraph on "The Book I Like Best," and tell specifically why you like it.

2. Take any one of the characters presented in the book mentioned in (1) and from the impressions you got in reading the book, describe his appearance as he seems to you.

3. Write a newspaper account, real or imaginary, of a wedding which you have attended. Tell something about the ceremony and about the two people who were married. Always tell the things that those who were not present might want to know.

4. Write a paragraph on the "Benefits of Monthly Examinations." Try to make your points clear and distinct.

FOURTH MONTH.

Structure of Elements.—Study elements as simple, complex, and compound. Compare and learn definitions, and classify elements in read-





ing lesson. If the work proves difficult, go over it again. Study contracted sentences. Note the means by which brevity is secured and its purpose. Practice the expansion of contracted sentences found, and note the strength of expression secured by the contraction. Study abridged propositions in complex sentences, as above. Spend some time analyzing and placing in diagram sentences illustrating the various topics studied to date.

ENGLISH COMPOSITION.

1. Write a personal description of yourself, or of some one selected by the teacher. See (4) of first month, seventh year.

2. Write a paragraph on the "Evils of Monthly Examinations." State definitely your own personal opinions.

3. Write a composition on "Twenty Years Ago" and show what changes have been wrought in that line by inventions of which you personally know or can learn.

4. Write an imaginative composition on "Twenty Years Hence" and predict what will happen to a few of your schoolmates.

FIFTH MONTH.

Construction of Nouns and Verbs.—Study all rules and notes for construction of nouns; as, subject-nominative, predicate-nominative, possessive, objective, and absolute. Read all notes and learn rules, as they form a convenient method of remembering many grammatical principles. Same for pronoun, adjective, and verb. Teach correct forms where errors are apt to be made; as, in predicate-nominative, objective in apposition, objective form of interrogative pronoun, and of relative, position of preposition, "*number*" of pronouns and "*forms*" of verbs to agree with two or more subjects, etc.

ENGLISH COMPOSITION.

1. Tell briefly the story of some book you have read.

2. Write a letter to a friend and ask him to write for you a letter of recommendation. Follow directions given in second month (4), seventh year.

3. Write a note thanking your friend for the favor asked in last week's note. Begin and end as before.

4. Write a brief description of a storm ending with the appearance of things when the storm was over. Try to reproduce the effect that the storm made on you.

SIXTH MONTH.

Analysis.—Study rules for construction of adverbs, prepositions, and conjunctions. Spend this month in analyzing, and writing in diagrams well selected sentences either from the grammar or reader. Have diagrams made neatly; all ruling and writing done with ink, on good paper. The list of words found in most grammars, used as different parts of speech, contains many of the most difficult constructions. It will repay careful study.

ENGLISH COMPOSITION.

1. Write a description of any common flower you choose.

2. Write a description of any domestic animal at your home, and do not tell what it is until the end.

3. Write a paragraph on "Why Farmers Should Be Educated Men." Give clear, specific reasons.

4. Write an account of an accident which you have either seen or imagined. Try to keep the reader in suspense and then surprise him in the end.

SEVENTH MONTH.

Punctuation.—Study punctuation on the following plan: Have pupils read carefully all the rules for the use of the comma, and the notes below, etc. When the class is called, have pupils bring the readers, and with the book open, endeavor to find and state a reason for the use of every comma found; same with semi-colon, colon, period, and all other marks. Same with figures of etymology, of syntax, and of rhetoric. Figures are studied best in poetry. Make a brief study of prosody, kinds of verse, stanza, poetic feet. Learn what is meant by *long*, *common*, and *short* meter.

ENGLISH COMPOSITION.

1. Write a paragraph on "Getting Ready to Move." Try to present a picture of the disordered condition of the house, and then the moving wagons with their varied freight.

2. "A March Day." Present a picture of a windy day in March by its effects on persons and objects rather than by direct statements concerning the attributes of the day.

3. "Getting Ready for Spring Work." Tell the various specific things that are done in preparing for spring work on the farm.

4. "On the Way Home from School." Give an account of any incident which occurred to you in going home from school.

EIGHTH MONTH.

Review.—Review work done in second, third, and fourth months. Review the chief rules in syntax. Analyze and place sentences in diagram. Use ink and rulers.

ENGLISH COMPOSITION.

1. "On My Way to School." Pick out three or four distinct things you see on your way to school—the fields, the trees, the road, and describe them.

2. Write a paragraph on "When I Am a Man" or "When I Am a Woman", and tell the different things you would like to do and be and see.

3. Reproduce in writing a short conversation which you have heard, and which amused you. Paragraph and quote what each speaker says.

4. "The Changes of a Month." Take the same things that you described in (1) above and tell in what way they have changed in the last month.





ARITHMETIC.

Alternation.—The arithmetic of this year is intended to alternate with the business arithmetic of the seventh year, and should be studied during 1899-1900, and each alternate year thereafter.

Aim.—The aim of arithmetic in the schools is not merely to give expertness in the various arithmetical processes. It is quite as much to lead the student habitually to consider quantitative relations in his environment, to develop his mathematical sense, so that he will readily proportion means to ends in the practical affairs of life. The various processes should therefore be taught objectively with material drawn from the environment, and the best problems are those that kindle his interest by dealing with the facts of his experience or of his other school studies. The arithmetic class is a place for instruction—not merely for testing and lesson-hearing. The principal use of the text-book is to furnish additional problems after the “local” problems are exhausted. The arithmetic of this year deals with mensuration. Pupils should be provided with a rule, a pair of dividers, and a right triangle of wood, hard rubber, or cardboard. An accurate diagram, drawn to a scale, should be made of all problems that admit of it. The various rules of mensuration should be developed inductively from actual measurement of objects. They should be expressed in formulas. Simple algebraic processes should be taught as they are needed in the development of formulas. Historical data relating to our standard weights and measures add to the interest.

FIRST MONTH.

Weights and Measures.—Tables of avoirdupois weight, troy weight, and apothecaries’ weight. Use of each. Reduction, addition, etc. of compound numbers. Changing weights troy to weights avoirdupois through the common unit, the grain. Comparison of apothecaries’ fluid measure with apothecaries’ weight.

United States Money.—Weights of coins; alloy; coinage value of the ounce of gold, or silver; coinage ratio. History of our coinage. English money compared with troy weight. Derivation of the terms “pound sterling”, “pennyweight”, “sovereign”, and “guinea”. The franc and reichsmark. Translation of price-quotations into different money systems.

Long Measure.—Teach five names for each unit, thus:

$$36 \text{ inches} = 3 \text{ feet} = 1 \text{ yard} = \frac{1}{4} \text{ rod} = \frac{1}{1760} \text{ mile.}$$

Metric System.—Its history; the measurement of the meridian. Teach units with a meter-stick. Have pupils make cubical vessels of stiff paper, capacity one litre (length of side one decimeter, or $3\frac{1}{8}$ inches). Have pupils make many measurements, and calculate many areas and volumes in metric units. Later teach that the legal equivalent of the meter is 39.37 inches; of the gram, 15.432 grains. Teach approximate equivalents of leading metric units. Arguments for and against the adoption of the metric system by the United States.

SECOND MONTH.

Square Measure.—Build rectangles of inch-squares until the rectangle is clearly imaged as made of rows of unit-squares. Develop formula for area, $A = a \times b$. Method of drawing parallels with triangle and ruler. Various kinds of angles, triangles, and polygons. Properties of the isosceles triangle. Mode of bisecting a line, or angle, with dividers and ruler. Areas of rhomboids and triangles.

Simple rules for calculating bills of papering, painting, and plastering. Carpeting; show how to compute the waste in matching by comparing the length of the room with the length of the design in the carpet.

Measurement of the Circle.—Define terms, circle, circumference, radius, diameter, arc, chord, sector, quadrant, segment, etc. Show that a degree is a unit of arc-measure, and a unit of angle-measure. Find ratio of circumference to diameter by measuring cylindrical bodies, dividing, and averaging quotients. Call this ratio π (pi). Use $3\frac{1}{2}$ as its value in rough calculation. Develop formula for area of circle by dividing the circle into 16 equal sectors, and fitting them together so as to form a rhomboid, $\pi r \times r = \pi r^2$. Show that the circle is approximately $\frac{11}{14}$ of the circumscribed square. Measure many circumferences and compute diameters and areas.

THIRD MONTH.

Similar Figures.—Develop principles of ratio and simple proportion. Compare a triangle with others whose sides are respectively 2, 3, 4, and 5 times the sides of the first triangle. Show (1) that the triangles are mutually equiangular; (2) that their corresponding sides are proportional; (3) that the ratio of their areas is the square of the ratio of the corresponding sides. Show that principle (3) applies to squares, circles, and other similar plane figures. Calculation of heights and distances through the properties of similar triangles.

Land Surveying.—Teach if possible with a surveyor's chain. Compare the ease with which the area in acres is found when the measurements are taken in chains and links with the complex calculation needed with the other linear units. Study in detail our system of rectangular surveys. (See fourth month of seventh year geography.) Description and area of various tracts. Problems in rainfall per acre, irrigation, crop-yields, and wire fencing.

Cubic Measure.—See that rectangular solids are imaged as made of equal layers composed of equal rows of unit cubes.

FOURTH MONTH.

Surfaces and Volumes.—Have pupils make prisms and cylinders of stiff paper, and develop the method of calculating their surfaces and volumes. The volume should be imaged as made of layers each containing as many unit cubes as there are square units in the base. Capacity of bins, tanks, cisterns. Verify and learn the following approximate equivalents: One bushel = $\frac{5}{8}$ of a cubic foot. One bushel of corn in the ear = $2\frac{1}{2}$ cubic feet. One barrel = 4 cubic feet. $7\frac{1}{2}$ gallons = one cubic foot. A cistern 8 feet in diameter holds one barrel for every inch in depth.

In solving problems, make first a rough estimate of the capacity to compare with the accurate result.

Specific Gravity.—Measure and weigh bricks, and regular blocks of wood, stone, and metal, and divide their weights by the weights of equal volumes of water. Weigh with spring-balance irregular masses of stone and metal; weigh the same in air and divide the weight in air by the loss of weight in water, thus determining the specific gravity of the bodies. Give numerous problems involving the relation of weight to volume.

Masonry.—Calculate brickwork by the simple rule, $22\frac{1}{2}$ brick to the cubic foot. Stonework measured by the perch and cord (100 cu. ft.). Wood measure.

No month's work in the course can be made more interesting and valuable than this.

FIFTH MONTH.

Lumber Measure.—Teach the use in building of sills, joists, studing, rafters, sheathing, siding, lath, etc. If possible at any time during the year, visit a partially built house to give this lesson. Show the relation of the base-price of lumber to the added price for greater lengths.

Explain this form used in the computation of the various items of a lumber bill:

$$\frac{\text{Number of pieces} \times \text{thickness} \times \text{width} \times \text{length} \times \text{price per M.}}{12 \times 1000} = \text{cost.}$$

Calculate the cost of the material for the neighboring sidewalks, fences, and coal shed, at current prices for lumber. Study the construction of a rural schoolhouse and make out a bill of lumber at current prices. Problems in shingling.

Involution and Evolution.—Teach squares to 25. Short method of squaring numbers ending in $\frac{1}{2}$ and 5: $(7\frac{1}{2})^2 = 8 \times 7 + \frac{1}{4} = 56\frac{1}{4}$.
 $(75)^2 = 80 \times 70 + 5^2 = 5625$.

Method of squaring numbers near multiples of 10:

$$78^2 = 80 \times 76 + 4 = 6080 + 4 = 6084.$$

Method of finding product of two numbers whose difference is an even number: $63 \times 67 = 65^2 - 2^2 = 4221$.

Roots and Their Expression.—Teach square root as the process of finding the side of a square whose area is known. Pay especial attention to the square roots of decimals and common fractions. See that at the end a good oral statement of the process is worked out and memorized.

SIXTH MONTH.

Teach by actual drawing and paper-cutting that the square on the hypotenuse of a right triangle is equal to the sum of the squares on the other two sides. Apply in numerous problems. Memorize $\sqrt{2} = 1.414$ and $\sqrt{3} = 1.732$, as key-numbers to the diagonal of a square and the diagonal of a cube. Show that if the sides of a triangle are proportional to 3, 4, 5, the triangle is right-angled. Use of this fact in constructing a right angle.

Cube Root.—See that the mode of constructing larger cubes out of inch-cubes is clearly imaged. Teach cube root with blocks, but at the end secure a clear statement of the figure-process.

SEVENTH MONTH.

Pyramids, Cones, Frustums.—Make these forms of stiff paper. Calculate surface-area and volume of the special figures made, and develop general formulas for base, slant height, lateral edge, lateral surface, volume, in terms of height and radius, or side of base. Show that a triangular prism of wood or turnip can be cut into three equivalent triangular pyramids, and that the paper cone holds one third as much dry sand as the cylinder of the same base and height.

The Sphere.—Fix tacks at the centers of convex surface and flat surface of a hemisphere (half of a croquet ball), and show that twice as much waxed top-cord can be wound on the convex surface as on the flat surface. Hence the surface of the sphere equals four times the area of circle of equal radius. To find the volume of the sphere, divide a round potato into spherical pyramids whose height is the radius and whose total base is the surface. Hence the volume equals $\frac{1}{3}$ of the radius \times surface.

Show that a sphere is $\frac{2}{3}$ of a cylinder of same height and diameter, and that its surface is $\frac{2}{3}$ of the surface of such a cylinder. Show that the cylinder is $\frac{11}{12}$ of the cube of the same dimensions, and that the sphere is $\frac{11}{12}$ of the cube. Review with many miscellaneous problems.

EIGHTH MONTH.

Longitude and Time.—Find from maps the longitude of many important cities. Determine your local longitude from large map of Illinois. Difference of longitude by subtraction and addition. Consider the apparent motion of the sun rather than the real motion of the earth; that the sun travels westward 360° in 24 hours, 15° in one hour, 1° in four minutes, etc. See that this westward motion of the sun, or moon, at the rate of $15'$ (13 miles) per hour is clearly imaged. Mode of determining longitude at sea. Where the day begins. Standard time belts.

The Calendar.—The three natural time units, the solar year, the lunar month and the day. Attempts to adjust these for working purposes. The Julian calendar. Varying length of the months. The Gregorian calendar. Why ten days were dropped in 1582. Present rule for leap-year. Amount of annual error in the present calendar. Definition of calendar month. Teach the proper method of finding the interval between two dates by counting by years as far as possible, then by calendar months, then by days. General review of mensuration, and its formulas.

GEOGRAPHY.

Alternation.—See suggestions at the head of geography for seventh year and note that the work of the two years is planned to alternate. Have a class in eighth year geography during 1897-8, and in seventh year geography during 1898-9, and so continue to alternate.

FIRST MONTH.

Europe.—Study Europe as a whole, following the plan for the study of North America.

SECOND MONTH.

The British Isles.—Name them. What countries on them? By what waters are they surrounded? The surface of Scotland is very rough. The Grampian Hills and all north of them constitute the Highlands of Scotland; all south of the Grampians, the Lowlands. Notice two of the lakes, using extracts from the "Lady of the Lake" when studying Loch Katrine. Poor soil in the north. Occupations of the people, their customs, homes, food, etc. Locate and tell what you can about these cities: Edinburgh, Aberdeen, Inverness, Glasgow. Name places of interest.

England.—Boundaries between England and Scotland. Locate the Pennine and Cumbrian mountains. The "Switzerland of England"? Why so called? Lake Windermere? Agriculture in England? Study the Thames, Tyne, Severn, and Mersey rivers. Locate these cities, and say what you can about each of them: Newcastle, York, Sheffield, Leeds, Bradford, Nottingham, Birmingham, Lancaster, Manchester, Liverpool, Bristol, Plymouth, Portsmouth, Hastings, Dover, Canterbury. Why are nearly all of the manufacturing cities in the north? About the commerce of England. Why does England keep such a large navy?

Wales.—Surface, minerals, customs, manners, and language of the Welsh.

Ireland.—Surrounded by what waters? Surface? Reason for mild climate? Locate these cities and tell for what they are noted: Belfast, Dublin, Cork, Limerick. Tell about the lakes, Giant's Causeway, etc.





Productions. Through what waters would a vessel pass in going from London to New York? From Liverpool to Baltimore? From Glasgow to New Orleans?

Norway and Sweden.—Norway and Sweden occupy all of the Scandinavian peninsula. Name the waters surrounding the peninsula. The Scandinavian Mountains are nearer the west coast than the eastern. Effect on the surface of both countries? On the rivers? On the fitness of the countries for agriculture? Tell about the people, their occupations, homes, customs, intelligence, etc. Productions of both countries, climate. Why such long days in summer in the northern part? Long nights in winter? Why? Locate these cities and tell for what each is noted: Stockholm, Carlskrona, Christiania, Bergen.

Denmark.—Denmark occupies the northern part of the peninsula of Jutland. The surface is low and sandy. The land is cultivated with great care. Copenhagen is the capital and only city of importance. It is situated on Seeland Island at the entrance to the Baltic Sea.

Holland.—Study its surface, climate, rivers, canals, soil, productions. Locate and study Amsterdam, The Hague, Rotterdam, Leyden, and Utrecht.

[This month's work has been written out with some degree of fullness to aid the teacher in determining what he should teach about the other countries of Europe. All are not of equal importance. To Americans Great Britain is of the most importance (Why?), and then come France and Germany. The danger is that too much will be attempted under the mistaken idea that the more places one can name and locate, the more he knows of geography. It is not necessarily true. Be thorough. Fix things so they will stay. Keep reviewing constantly. Use the sand, chalk, and pencil freely.]

THIRD MONTH.

Teach Belgium, the German Empire, Austro-Hungary, and Russia. Review briefly the second month's work. There should be some review work every day.

FOURTH MONTH.

Teach France, Switzerland, Italy, Roumania, the Balkan States, Turkey, the Iberian, and Greek peninsulas.

FIFTH MONTH.

Asia.—Study Asia as a whole following the plan for the study of North America. Note that the principal mountains and plateaus are in the interior, while the plains are on the borders of the continent. How are they situated in the Americas? The great northern plain of Asia because of its latitude and because it slopes to the north has a cold climate and barren soil. The rivers because of their direction are of little value to man, and should receive but slight attention. The southern part of Siberia is rich in minerals which are mined mostly by political prisoners banished from Russia in Europe. Study three cities in this country. Notice the scarcity of lakes in the interior of the continent. Compare in this respect with North America.

China.—Study the slope of the country; two great rivers; the states comprising the empire; the climate and cultivated products. Compare in these respects with the United States. Study the people, their occupations, homes, customs and costumes, food, manner of life, etc. Manufactures, commerce, education, government. Locate and study three

cities: Peking, Shang-hai, Hong Kong, Canton. Compare latitude of Peking with that of Constantinople, Madrid, Philadelphia, Springfield (Ill.), and Denver.

Japan.—Notice that the empire consists of many islands, including Formosa. Name the largest three islands; give the capital and its sea-port. Study the climate, crops, and people.

Corea.—Study Corea and its people. Name the capital.

Anam and Siam.—Anam and Siam should receive but slight attention. Locate them and give their capitals. Say a few things about the people and productions. Make much of Singapore as a receiving and distributing point.

Hindustan.—This country (and with it may be included Burmah), is worthy of much attention. Study it as you did China, but with a greater degree of fullness. Dwell especially upon the basin of the Ganges and its products. Study Ceylon and its products. Locate and study these cities: Calcutta, Delhi, Madras, Bombay, Benares. Say something of the province of Cashmere and its products.

Pass over the remaining countries of Asia quite rapidly, until you reach Palestine. This little country because of its past history and associations is worthy of careful attention, so is the basin of the Euphrates. In studying Mesopotamia and Palestine use the Bible names, in preference to the modern. Modern Palestine is of little worth. Study such other facts in regard to Asia as time will permit.

SIXTH MONTH.

Africa.—Study this continent as you please, but do not waste time. Ten lessons should be sufficient. Devote the most of this time to a study of the coast line, surface, a few rivers, the countries in the north (especially Egypt), the countries in the south, and the Congo Free States. Point out the relation of the backwardness of civilization to the climate and to the regularity of the coast line. Teach such cities as you think fairly intelligent American boys and girls ought to know; no others.

Oceanica.—Devote most of the remaining time to a study of Australia. Study its surface, climate, and productions. Name its countries in order, and show why the more prosperous ones are in the east and south-east. Name the capitals, making a special study of Melbourne. Teach a few facts about New Zealand, New Guinea, the Philippine Islands, Borneo, Sumatra, Java, and others if you have time. Make a more careful study of Java than of the others, and show the importance of the city of Batavia.

Hawaiian Islands.—Locate the Hawaiian Islands, showing what gives them their chief importance. Study the soil, products, volcanoes, people, government. Review the fifth month's work, briefly.

SEVENTH MONTH.

To get the best results from this month's work the wall-map must be used very freely.

Comparisons and Relief.—Notice the resemblance of the two Americas, Africa, and Australia (including Tasmania), in shape, position and direction of mountains, and situation of plains. Each has a great



bend or gulf on the west, a large island or group of islands east of the south part, and a sea on the north (Hudson Bay may justly be termed a sea). Point to these places on the wall-map. In Eurasia the principal mountains extend in the direction of the parallels, in the New World they extend in the direction of the meridians. The less important mountains follow the direction of the parallels in the New World, and of the meridians in Eurasia. The "backbone" of Eurasia is formed by the Pyrenees, Alps, Balkan, Caucasus, Hindu-Kush, and Himalaya mountains. Point to these mountains on the wall-map. In Europe the more important countries are on the north, in Asia on the south, excepting China. Locate the different countries on the wall-map. In the New World, most of the land is on the east side of the "backbone." What would be the effect on the climate, and productions of South America if the Andes were close to the Atlantic instead of the Pacific?

This month's work so far is in reality a review of work previously done, and the pupils should be able to pass over it rapidly. The great slopes may be divided into smaller slopes if time will permit. Teach that all of the land may be divided into two slopes, a long, gentle one facing the Atlantic and Arctic oceans, and a short, abrupt slope looking out upon the Pacific and Indian oceans. Here again, use the wall-map; use it whenever you can to advantage. It may prove the geographical salvation of the pupils. The importance of slopes in determining the direction of rivers, the climate and productions, should be noticed. And the children should be led to see the influence of the mountains in fixing the shape of the continents and in regulating the distribution of the rains.

Winds.—Teach what the air is, how high it reaches above the land and water, its weight, sustaining power, where it is densest, the barometer and its uses. Wind is a portion of the atmosphere in motion. Teach the cause of the motion. Show that the winds are the water carriers, that without them the land would be a desert, even on the borders of the sea. The air is capable of holding a certain quantity of moisture in the form of vapor, heat increases its capacity for holding vapor, cold diminishes it, the cold increases with the distance above sea-level. Wind that is moving from a cold region into a warmer one is a dry wind because its capacity for holding vapor is being increased. Wind that is moving from a warm region into a cold one is a wet wind because its capacity for holding vapor is being diminished. The sun converts the water into vapor, the winds carry the vapor inland until they meet with some mountain barrier that forces them into a higher and colder region, or they may come in contact with a colder stratum of air, even where there are no mountains, the vapor is condensed and falls in the form of rain, etc. Teach the work accomplished by the water from the time it falls on the land until it returns again to the oceans. Speak of it not only as fertilizing the soil and sustaining life, but also as a commercial agent, manufacturing agent, and sanitary agent. Show that it leaves the ocean pure and returns impure, to be again purified and sent on its errands of mercy, and that all the water carried to the oceans by the rivers was first carried by the winds to the land. Teach the general theory of the winds, showing

why the trade winds blow west, the return trades northeast in the northern hemisphere, and southeast in the southern, the number of zones of calms, why in their present position, and the latitude at which the return trades reach the surface. Study the Monsoons, locating them and telling when and why they change direction. If the movements of the winds are understood, and the importance of the mountains as condensers is known, there will be little or no difficulty in seeing why some parts of the land have so little rain, while other parts have such great abundance. Teach how dew and hoar frost are formed, and the conditions favorable to their formation. As a preparation, teach what is meant by radiation, and show its bearing on the subject in hand.

EIGHTH MONTH.

Ocean Currents.—Teach that the ocean currents, as well as the winds, are due to the unequal heating of different parts of the earth's surface, that their directions are modified by their inertia, the directions of the winds, and the shape of the land masses. Trace the great current of the Pacific, under its various names, from its origin in the Antarctic ocean until on its return from the north along the American coast it is merged into the Equatorial Current, and show how it affects the climate of the countries bordering on the Pacific. Show that portions of this current, after it is broken up by the islands of Australasia, are gathered together and sweep across the Indian ocean, how the united current passes south on either side of the island of Madagascar, is met south of Africa by the movement of the waters from the Antarctic, passes north along the west coast of Africa, is turned west by the shape of the land and the direction of the winds, is divided by Cape St. Roque, the main part going north and becoming the Gulf Stream. Follow the Gulf Stream and show its influence on the climate of the countries bordering on the Atlantic. Study the Arctic currents; but it is doubtful if the minor currents and counter-currents are worthy of much attention at this stage of your pupils' progress. What are Sargasso Seas, where are they, and why in their present position?

Deserts.—What conditions of heat and moisture are essential to vegetable growth? What is a desert? How are deserts formed? What kind of soil is usually found in deserts? Locate the principal deserts and give reasons for the dryness of each. What is an oasis? How formed?

Vegetation.—From a knowledge of previous topics, locate on maps the regions where the most favorable conditions for vegetation exist. Study the vegetation of the different continents, with especial reference to those kinds which are of use to man for food, clothing, or shelter.

Minerals.—Locate in each continent the regions where the useful minerals are found, and tell how, and in what form, each one is obtained. Maps may be made showing mineral regions in the same way that the plant maps are made.

Adaptation to Man's Wants.—Study each continent with reference to its advantages for the abode of man—(a) with reference to food materials; (b) to materials for clothing; (c) for shelter; (d) to advantages for transportation and exchange of products. Show why the continents of the north are the historic continents.



Commerce and Manufactures.—Locate principal water routes of travel and commerce, including oceanic routes, navigable rivers, and canals. Locate the principal shipping ports of each country, and tell what products are sent out from and what are received at each port. Learn, from a gazetteer or other source, the most important facts connected with each of these places.

UNITED STATES HISTORY.

Alternation.—Read the suggestions at the head of history for seventh year, and note that the work of the two years is arranged to alternate. As this alternation began with the Course of 1894, the history here given should be taught during 1897-8, that of the seventh year during 1898-9, and so continue to alternate.

FIRST MONTH.

Articles of Confederation.—Submission of the Articles of Confederation by the Continental Congress for ratification. Ratified in 1781. Weakness of the government under the Articles of Confederation. Ordinance of 1787. Forming the Constitution. Its ratification by the people of nine states. Transfer of the government from the Articles of Confederation to the Constitution.

The Constitution.—Inauguration of Washington. Problems before the new government: Land claims; diplomatic relations; debts, foreign and domestic; Indian troubles. The beginning of political parties. Adams' inauguration. Jay's treaty. France's treatment of our envoys. Destruction of American shipping by French armed vessels. Alien and sedition laws. Decline of the Federalist party. Election of Jefferson by the House of Representatives. His inauguration at the new Federal Capital. Cession of Louisiana to Spain by France in 1763. Recession to France in 1800. Purchase by Jefferson in 1803. Lewis and Clark's expedition. Burr's career. War with the Barbary States. Embargo. Fulton. War with western Indians.

Summary.—1. Adoption of the Articles of Confederation; their weakness. 2. The Constitutional Convention. 3. Government under the Constitution. 4. Effects of Jay's Treaty in the United States and in France. 5. Commercial relations with France, Spain, England, and Barbary States. 6. Rise of the Anti-Federalist party.

Review. Examination.

SECOND MONTH.

Second War with England.—Election of Madison. End of the Non-Intercourse Policy. Tecumseh's conspiracy. Declaration of war with England. Loss of Detroit and the Northwest. Naval victories. Perry's victory on Lake Erie. Ravages of the Atlantic coast. The Hartford convention. Treaty of peace. Jackson's victory at New Orleans. Admission of new states since 1789. Westward movement of immigration begun. Election of Monroe.

The Era of Good Feeling.—Seminole war. Monroe's tour through New England. Purchase of Florida. The Missouri Compromise. Internal improvements. The founding of the South American republics. The Monroe Doctrine. The Protective Tariff of 1824. Lafayette's visit. Election of John Quincy Adams.

Summary.—1. Impressment of American seamen. 2. Second war with England. 3. Results of the war. 4. National prosperity. 5. The slavery question. 6. The Monroe Doctrine. 7. Election of Adams by House of Representatives.

Review. Examination.

THIRD MONTH.

The Rise of the Democratic Party.—The opening of the Erie canal. The first railroads. Temperance societies. Death of Adams and Jefferson. Tariff law of 1828. Election of Jackson. The spoils system. Anti-slavery agitation. Jackson's opposition to the United States bank. Nullification—the result of high tariff. Removal of the government funds from the United States Bank. Black Hawk war. Election of Van Buren. Financial crisis in Van Buren's term. Distribution of the surplus among the states (Illinois got \$477,919.24). Sub-treasury scheme. The Canadian rebellion. The Ashburton treaty. Election of Harrison. Dorr's rebellion. The telegraph. The Mormons. Election of Polk. Annexation of Texas.

Summary.—1. Internal improvements. 2. Growth of the Protective Tariff doctrine. 3. Expiration of the charter of the United States Bank—other financial matters. 4. Diplomatic relations with England. 5. Slavery discussion. Annexation of Texas.

Review. Examination.

FOURTH MONTH.

Slavery Agitation.—The Oregon boundary. War with Mexico. Taylor's "Army of Occupation." Three campaigns—1. Against California. 2. Against New Mexico. 3. Against the City of Mexico. The Wilmot Proviso. Follow with some care Scott's campaign from Vera Cruz to the City of Mexico. Treaty of peace. Discovery of gold in California. Discuss the items in the compromise of 1850. Opposition to the Fugitive Slave law. Death of Calhoun, Clay, and Webster. Uncle Tom's Cabin. Crystal Palace. Perry opens the ports of Japan. Survey for the Pacific railroad. "Squatter Sovereignty." The struggle in Kansas. The American Party. Election of Buchanan. Dred Scott decision. Business panic of '57. Silver mines and oil wells. John Brown. Election of Lincoln. Secession. Peace congress. The Montgomery government. Star of the West.

Summary.—1. War with Mexico—result. 2. Settlement of the Northwest boundary. 3. National legislation—Omnibus Bill. 4. Repeal of the Missouri Compromise. 5. The Dred Scott decision. 6. Rise of the Republican party. 7. Secession and rebellion.

Review. Examination.

FIFTH MONTH.

Preservation of the Union.—Lincoln's inaugural address. Firing on Ft. Sumter. Call for 75,000 volunteers. Removal of Confederate capital to Richmond. Confederate line of defense: From Fortress Monroe via Richmond, Lynchburg, Cumberland Gap, Nashville, Forts Donelson and Henry, to Columbus. The Confederates hold the Mississippi river from below Cairo to its mouth. They also hold the Atlantic and gulf



ports from Chesapeake Bay south. The government's purposes were: 1. To break the Confederate line of defense. 2. Open the Mississippi river. 3. Blockade the southern ports. The Trent affair. Grant opens the Mississippi. Emancipation proclamation. Occupancy of the Atlantic and gulf ports. Campaigns against Richmond by McClellan, Pope, Burnside, Hooker, Meade, and Grant. Sherman's march to the sea. Surrender of Lee.

Summary.—1. Causes of the Civil War. 2. Activity of the seceded states. 3. Defensive and offensive plans of campaigns. 4. Progress in naval warfare. 5. Foreign relations. 6. The downfall of the Confederacy.

Review. Examination.

SIXTH MONTH.

End of War and Reconstruction.—Assassination of Lincoln. Sanitary and Christian commissions. The grand review. Disbanding the armies. Organizing governments in the seceded states. Amnesty proclamations. Public debt and means for its reduction. Views of the President and of Congress on reconstruction. Thirteenth, fourteenth, and fifteenth amendments. Tenure of office act. Impeachment of the President. Trial and acquittal. Purchase of Alaska. Maximilian in Mexico. Atlantic cable. Election of Grant. Pacific railroad completed. The Geneva award. Great fires in Chicago and Boston. Commercial crisis of '73. State governments in the South. Resumption Act. Centennial exhibition. The Electoral Commission. War with the Sioux Indians. Hayes' inauguration and withdrawal of troops from the South. Resumption. The Halifax award. Election of Garfield.

Summary.—1. Disbanding the armies. 2. Different theories about reconstruction. 3. Impeachment, trial, and acquittal of Johnson. 4. Diplomatic relations with foreign countries. 5. A century of government of the people, by the people, for the people. 6. Electoral Commission. 7. Resumption of specie payments.

Review. Examination.

SEVENTH MONTH.

Recent History.—Death of Garfield. Anti-polygamy bill. Civil service. The New Orleans exhibition. Standard time. Yorktown celebration. The New South. Election of Cleveland. Presidential succession law. Electoral count act. Interstate commerce law. Labor troubles. Statue of Liberty. Centennial of Washington's inauguration. Pan-American congress, the McKinley tariff and reciprocity. The tenth census (62,622,250). Center of population. Bering Sea arbitration. World's Columbian Exposition. Cleveland's second term. Repeal of the Sherman Act of 1890. Revolution in Hawaii. Wilson tariff. Financial stringency. Issuing bonds. Campaign of 1896. Election of McKinley.

Summary.—1. Progress of the Southern states. 2. Passage of important laws. 3. Tariff discussions. 4. Triumph of arbitration. 5. Financial distress. 6. The "Gold Standard."

Review. Examination.

EIGHTH MONTH.

Topical Review.—1. Discuss the condition of Europe at the time America was discovered.

2. Study the geographical relation of Europe to America.
3. Give various motives of people for coming to America.
4. Name thirteen original colonies with places and dates of settlement.
5. Give causes of progress, or lack of progress, in the several colonies.
6. Sketch rapidly the inter-colonial wars.
7. Describe with some care the three forms of colonial government in the new world.
8. Enumerate the grounds of complaint the colonies had against the mother country.
9. Show the material growth of the thirteen colonies up to the Revolution.
10. How may we account for the presence in the new world of so many eminent statesmen in 1776-1789?
11. Enumerate and discuss briefly the acts of these eminent men.
12. Describe briefly the conduct and movement of Washington and his army during the Revolutionary war.
13. Show the value to the cause of freedom, of the labors of Franklin, Morris, Paine, Lafayette, Pitt.
14. Sketch briefly the contents of the Declaration of Independence.
15. Give a brief outline of the Articles of Confederation.
16. Tell all you know of the convention that framed the Constitution.
17. Name and explain briefly our "Free Institutions."
18. What is meant by our diplomatic relations with other nations?
19. Give briefly the great problems before the United States in Washington's administration.
20. Tell all you can of the Louisiana purchase and its advantages.
21. Could the second war with England have been averted? If yes, how?
22. State as fully as you can the Monroe Doctrine.
23. Give full history of the Missouri Compromise.
24. What do you understand by the doctrine of States' Rights?
25. On what ground was the war with Mexico justifiable?
26. Give a history of slavery in the United States.
27. Tell all you can of the Emancipation Proclamation.
28. Discuss the attitude of the United States toward the Indians since 1789.
29. Explain fully the purpose of the last three amendments to the Constitution.
30. Make a map showing the growth of the United States in territory with cost of each acquisition.
31. Discuss at some length any great state paper not referred to in the preceding topics.
32. Name and describe briefly the great inventions produced by American genius.
33. What have been some of the great calamities which have befallen the people of the United States?

THE HISTORY OF THE UNITED STATES

OF AMERICA

FROM THE FIRST DISCOVERY OF THE CONTINENT

TO THE PRESENT TIME

BY

JOHN ADAMS

OF THE MASSACHUSETTS

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JOHN ADAMS

OF THE MASSACHUSETTS

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The first of these is the fact that the United States is a young nation. It has only been about 150 years since it was founded. This is a very short time in the history of the world. The second is the fact that the United States is a large nation. It covers a vast area of land. The third is the fact that the United States is a powerful nation. It has a large population and a strong economy. The fourth is the fact that the United States is a free nation. It has a long tradition of freedom and democracy. The fifth is the fact that the United States is a peaceful nation. It has never been at war with itself.

The sixth is the fact that the United States is a progressive nation. It has always been at the forefront of change and innovation. The seventh is the fact that the United States is a diverse nation. It is made up of people from many different backgrounds and cultures. The eighth is the fact that the United States is a resilient nation. It has been able to overcome many challenges and setbacks. The ninth is the fact that the United States is a hopeful nation. It has a bright future ahead of it.

The tenth is the fact that the United States is a nation of opportunity. It offers many chances for people to improve their lives and achieve their dreams.

The eleventh is the fact that the United States is a nation of freedom. It allows people to live and work as they see fit. The twelfth is the fact that the United States is a nation of justice. It treats all people fairly and equally. The thirteenth is the fact that the United States is a nation of peace. It seeks to resolve conflicts through dialogue and negotiation.

The fourteenth is the fact that the United States is a nation of progress. It is always moving forward and improving itself. The fifteenth is the fact that the United States is a nation of hope. It believes in a better future for all.

The sixteenth is the fact that the United States is a nation of love. It cares for its people and its neighbors. The seventeenth is the fact that the United States is a nation of faith. It believes in the power of religion and spirituality. The eighteenth is the fact that the United States is a nation of courage. It is willing to stand up for its principles and values.

The nineteenth is the fact that the United States is a nation of strength. It has a powerful military and a strong economy. The twentieth is the fact that the United States is a nation of wisdom. It has a long history and a rich culture. The twenty-first is the fact that the United States is a nation of beauty. It has many beautiful landscapes and cities.

The twenty-second is the fact that the United States is a nation of goodness. It is a place where people can live and work in harmony. The twenty-third is the fact that the United States is a nation of kindness. It is a place where people can help each other and make a difference. The twenty-fourth is the fact that the United States is a nation of compassion. It is a place where people can show love and care for others.

The twenty-fifth is the fact that the United States is a nation of generosity. It is a place where people can give and receive help. The twenty-sixth is the fact that the United States is a nation of honesty. It is a place where people can be truthful and open. The twenty-seventh is the fact that the United States is a nation of integrity. It is a place where people can be honest and ethical.

The twenty-eighth is the fact that the United States is a nation of respect. It is a place where people can be treated with dignity and honor. The twenty-ninth is the fact that the United States is a nation of tolerance. It is a place where people can live and work together despite their differences. The thirtieth is the fact that the United States is a nation of understanding. It is a place where people can learn from each other and grow together.

The thirty-first is the fact that the United States is a nation of acceptance. It is a place where people can be who they are and be accepted for who they are. The thirty-second is the fact that the United States is a nation of inclusion. It is a place where everyone is welcome and valued. The thirty-third is the fact that the United States is a nation of unity. It is a place where people can work together and achieve great things.

The thirty-fourth is the fact that the United States is a nation of harmony. It is a place where people can live in peace and agreement. The thirty-fifth is the fact that the United States is a nation of balance. It is a place where people can find a healthy balance between work and life. The thirty-sixth is the fact that the United States is a nation of joy. It is a place where people can have fun and enjoy life.

The thirty-seventh is the fact that the United States is a nation of happiness. It is a place where people can be happy and content. The thirty-eighth is the fact that the United States is a nation of love. It is a place where people can love and be loved. The thirty-ninth is the fact that the United States is a nation of hope. It is a place where people can have hope for the future. The fortieth is the fact that the United States is a nation of faith. It is a place where people can have faith in themselves and in others.

The forty-first is the fact that the United States is a nation of courage. It is a place where people can be brave and stand up for what is right. The forty-second is the fact that the United States is a nation of strength. It is a place where people can be strong and resilient. The forty-third is the fact that the United States is a nation of wisdom. It is a place where people can be wise and thoughtful. The forty-fourth is the fact that the United States is a nation of goodness. It is a place where people can be good and kind.

The forty-fifth is the fact that the United States is a nation of kindness. It is a place where people can be kind and helpful. The forty-sixth is the fact that the United States is a nation of compassion. It is a place where people can be compassionate and caring. The forty-seventh is the fact that the United States is a nation of generosity. It is a place where people can be generous and giving. The forty-eighth is the fact that the United States is a nation of honesty. It is a place where people can be honest and truthful. The forty-ninth is the fact that the United States is a nation of integrity. It is a place where people can be honest and ethical. The fiftieth is the fact that the United States is a nation of respect. It is a place where people can be treated with dignity and honor.

CIVICS OR GOOD CITIZENSHIP.

To the Teacher.—An outline of work in civics is given because it is thought that the time has come when the principles of good government should be taught in every school. Too often the study of civil government is a study of the mere machinery of government with no personal relation to the boy or girl who studies it. Some work in civics is here given with the hope that its use will lead boys and girls to a keener sense of personal responsibility for good government, and for the proper treatment of their fellowmen. Many helpful suggestions have been taken from Dole's *American Citizen*, published by D. C. Heath & Co.

Caution.—The teacher should not take sides in the discussion of disputed or political questions. The reason is plain.

Alternation.—The work below is arranged to alternate with the physiology of the seventh year. During 1897-8 study civics, and during 1898-9 study physiology, and so continue to alternate.

FIRST MONTH.

Beginnings of Citizenship.—The family and its government. The schoolroom and its government. The playground and its lessons. The club or debating society. Personal habits. Principles that bind men together—respect for others' rights, majority rights, responsibility, the use of power, the public service, etc.

Constitution of United States.—Circumstances under which Constitution was adopted. Commit the preamble and discuss meaning of each clause. Three departments of our government—law-making, law-interpreting, law-executing. Law-making consists of House of Representatives and Senate. House of Representatives—of whom composed, qualifications, election, vacancies, apportionment, powers.

SECOND MONTH.

Rights and Duties of Citizens.—Purpose of government. Various forms of government. Local government—the town, the county, the school district. Cities and their government. Where responsibility lies for good government in cities. Local patriotism. The school system. It adds to the commonwealth. Why free? Value to the public of higher education. What the public schools should not teach. Cost of the schools.

Constitution.—Senate—of whom composed, qualifications, election, vacancies, powers, officers. Law-executing power—the President, term, two modes of election, (*a*) by electors, how appointed, how many in each state, process (state steps clearly); (*b*) elected by House of Representatives, under what condition and how. Qualifications of President, salary, for what and how removed, powers and duties, both military and civil. Vice President—how elected, qualifications, term, powers and duties.

THIRD MONTH.

Civil Service Reform.—Our civil service, office-seekers, consular and diplomatic service, how to secure needed reforms. Voting, methods, and purpose of. Political parties—why necessary, patriotic use of parties, independents. Work of committees of legislative bodies. Political "rings." The citizen's duties to his government. Abuses and

perils of government. Facts which every person should know—names of national, state, and local officers. Open questions—tariff, prohibition, free silver, etc. Improvement in government.

Constitution.—Law-interpreting power—judiciary, composed of supreme court and subordinate courts. Judges—how appointed, how removed, tenure of office, compensation, oath of office, functions. Provisions common to Senate and House—membership, oath, quorum, salary, rules, journal, yeas and nays, things prohibited, penalties.

FOURTH MONTH.

Wealth.—What wealth is. Business and money—various forms, natural resources, men, paper, public works, etc. Conditions unfavorable to accumulating wealth, favorable conditions, moral conditions. To whom wealth belongs—the useful, by discovery, by invention, by production, by works of distribution, transportation, protection, instruction, etc. (Name many other ways.) Property by earning, by exchange, by gift or inheritance, by natural genius, etc. (Name other ways.) Common property. Public interest in property.

Constitution.—State all steps by which a bill becomes a law or fails to become a law. What is done with orders, resolutions, etc. Powers and duties of Congress as to revenue—sources of revenue, uses of revenue. Powers and duties of Congress as to trade—kinds of traffic, means of traffic, hindrances removed by punishing counterfeiting, piracy, and felony, by protecting inventors, etc.

FIFTH MONTH.

Money.—What money is. Changes in money value. Double or single standard. Commercial paper. The government and paper money. Specie. Certificates. What capital is and how it grows. What credit is. Corporations. Profits, rents, and interest, and how they justly arise. Rates of interest. Labor and wages. Disturbances in industry. Business crises. Who the Socialists are. Causes of poverty—inefficiency, ignorance, idleness, misfortune, vice. What society should do for the poor. The object of society, freedom and manhood, faith in our fellow-men.

Constitution.—Powers and duties of Congress as to war—may declare war, grant letters, raise and support armies, etc. Powers and duties of Congress as to courts—may constitute inferior tribunals, etc., and prescribe penalties. Powers and duties of Congress as to states and territories. Congress may regulate election of its own members, etc. Name the things which the United States is forbidden to do; the things which states are forbidden to do.

SIXTH MONTH.

Buyers and Sellers.—The idea of business. Legitimate and illegitimate business. Law of supply and demand in buying and selling. Selling in dearest market. Buying in cheapest market. Freedom in trade. International freedom in trade. What harm freedom in trade may work, the two sides of the question. Paying one's debts. Bankruptcy.

Employers and Employed.—Rights of employers, fidelity. Rights of employees—wages, respect, honest management. The labor market.





Extremely low wages. Industrial warfare, strikes and lockouts. Trades-unions. Arbitration, co-operation, and profit-sharing.

Constitution.—Rights of states—to representation, in elections, with militia, in interstate relations, as to citizenship, making new states, as to fugitives, a guarantee, reservation of certain rights. Rights of individuals—of senators and representatives, as to treason, as to home, security, in criminal prosecutions, in civil actions, in the courts.

SEVENTH MONTH.

Treatment of Crime.—Who are criminals and our duties to them. Punishments—fines, imprisonment, death penalty. Rights of wrongdoers, and what we ought to do. Indeterminate sentence. Prison reform. Power of pardon (in Illinois). Prevention of crime. Detection of crime. Lynch law.

How to Help the Poor.—Pauperism. Charity—the general law. Why society must give relief. Who is responsible for the poor. What kinds of help do no harm. Friendly gifts and alms—the difference. The associated charities and social settlements. Savings banks. Housing the poor.

Problems of Temperance.—The old world idea and the American idea of temperance. A new moral rule. The reformers. License, drinking-saloon. Prohibition. Local option. Moral education.

Constitution of Illinois.—Government consists of three departments—legislative, executive, and judicial. Legislative, Senate and House of Representatives. Number of members in each house, term, qualifications, oath, salary. State term, qualification, salary, and duties of each member of the executive department—governor, lieutenant governor, secretary of state, auditor, treasurer, attorney-general, superintendent of public instruction. Many appointed state officers. Judicial—one supreme court, four appellate courts, seventeen circuit court districts. Term, qualifications, and salaries of these judges.

EIGHTH MONTH.

International Law.—International law and how it grows. Ancient warfare. Dawn of international rights. Christianity. The reciprocity of interests. Monroe doctrine. Purposes of international law. Diplomatic service. Foreign commerce and intercourse. Custom house. Maritime rights. Rights of travel and residence abroad. Arbitration and war. Genuine patriotism.

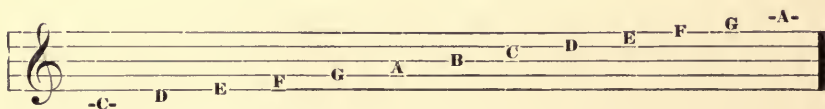
Constitution of Illinois.—In counties under township organization. County officers—judge, clerk, sheriff, state's attorney, coroner, circuit clerk and recorder, treasurer, county superintendent. Give term, salary, when and how elected, and duties of each county officer. Powers and duties of county board. Grand and petit juries. Counties not under township organization. Town—name town officers, give powers and duties of each, with compensation. School district—school directors, their election, powers and duties, compensation. How districts receive their share of the state fund.

RUDIMENTS OF MUSIC.

1. A tone is a musical sound.
2. A musical sound is one that is pleasing to the ear, and is produced by continuous and regular vibrations.
3. The properties of tones are length, pitch, power, and quality.
4. Length is the longness or shortness of tones.
5. Notes represent the length of tones.
6. Pitch is the highness or lowness of tones.
7. The staff represents the pitch of tones.
8. Power is the softness or loudness of tones.
9. Dynamic marks indicate the degrees of power.
10. Quality is the goodness or badness of tones.
11. Tones have four properties. The following diagram shows how each property of tones is represented:

1. Length, 

2. Pitch:



3. Power, pp, p, m, f, ff.
4. Quality, *Can not be represented.*









The teacher should illustrate each property of tone by singing and have pupils note the distinction. For length, sing a long tone and a short tone and ask what the difference is. For pitch sing a low tone and a high tone. For power sing a soft tone and a loud tone. Following the example given by the teacher and the answers by the pupils, the teacher should state the property, then again give the example and ask the pupil which property of tone was indicated.


LENGTH OF TONES REPRESENTED.

1. Characters called notes are used to represent the length of tones.
2. There are eight different kinds of notes in vocal music.
3. The note that represents (relatively) the longest tone is called a *whole* note.
4. Notes do not represent a *fixed* length of tones.
5. The notes are named by their relative length, viz: A note representing a tone one *half* as long as a whole note is called a half note; a note representing a tone one *fourth* as long as a whole note is called a quarter note, etc.
6. Notes and their names:






Notes represented by figures.	$\frac{2}{2} =$		Whole note.
	$\frac{2}{2} =$		Dotted half note.
	$\frac{2}{2} =$		Half note.
	$2 =$		Dotted quarter note.
	$2 =$		Quarter note.
	$\frac{2}{2} =$		Dotted eighth note.
	$\frac{2}{2} =$		Eighth note.
	$\frac{2}{2} =$		Sixteenth note.

7. A dot placed after a note adds one-half its length; ex.:  tied.

8. The tie indicates that the notes thus connected represent *one* tone.

9. A second dot after a note  adds one-half the value of the first dot.









RESTS.

1. Each note has a corresponding character called a *rest*, indicating a period of silence equal in length to the note.

2. Rests indicate the length of silence.

3. Dots placed after rests add to their length as with the notes.

RESTS AND THEIR NAMES.

Rests represented by zero.	$\frac{2}{0} =$		Whole rest.
	$\frac{2}{0} =$		Dotted half rest.
	$\frac{2}{0} =$		Half rest.
	$0 =$		Dotted quarter rest.
	$0 =$		Quarter rest.
	$\frac{0}{2} =$		Dotted eighth rest.
	$\frac{0}{2} =$		Eighth rest.
	$\frac{0}{2} =$		Sixteenth rest.

MEASURES IN MUSIC.

1. Measures, to the eye, are the divisions, made by the use of bars, of a series of notes, containing equal time lengths.
2. Measures, to the mind, are equal portions of time.
3. The regular recurrence of loud and soft tones (*accent*) determines the different kinds of measures.
4. A part of a measure is one of the equal divisions of a measure.
5. The number of parts into which a measure is divided is the name or kind of measure.
6. Measures having two parts are called *two-part* measure.
7. Measures having three parts are called *three-part* measure.
8. Measures having four parts are called *four-part* measure.
9. Measures having six parts are called *six-part* measure.
10. There are four different kinds of measures in common use.

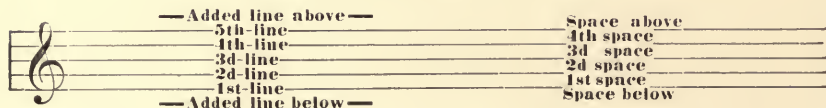
TIME MARKS AND BARS.

1. The figures $\begin{smallmatrix} 2 & 3 & 4 & 6 \\ 4 & 4 & 4 & 8 \end{smallmatrix}$ etc., when placed at the beginning of a piece of music, are called *time marks* or measure signs.
2. The upper figure indicates the number of parts in the measure.
3. The lower figure indicates the *kind of note* that represents *one* part of the measure.
4. Bars are vertical lines drawn across the staff to separate the measures.
5. Double bars indicate the end of a piece of music.

PITCH OF TONES REPRESENTED.

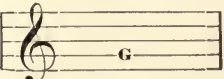
1. The staff is used to represent the pitch of tones.
2. The staff consists of five horizontal, parallel lines, and the spaces.
3. Each line or space of the staff represents a degree of pitch, and is named from the lowest upward.
4. When we wish to represent higher or lower tones than the staff represents, lines may be added above or below, and are spoken of as added lines. Do not use the term added space.

NAMES OF LINES AND SPACES.



CLEF AND PITCH NAMES OF TONES.

1. The tones are named in regard to pitch by using the first seven letters of the alphabet, viz: a, b, c, d, e, f, g.
2. The letters are called the pitch names of tones.

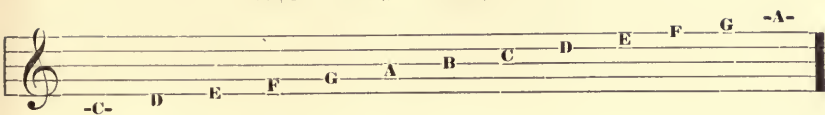
3. The clef,  shows that G is on the second line

of the staff, and is called the G clef, and represents the tones sung by the alto and soprano voices.





PITCH NAMES ON THE STAFF.



1. The staff represents the absolute (*fixed*) pitch of tones, hence the positions of the letters on the staff *never* change.
2. The scale represents the relative (changeable) pitch of tones, hence *one* of the scale may be on any degree of the staff.
3. There are three scales; Lower, Middle and Upper. Tone eight of the lower scale is tone one of the middle scale, and tone eight of the middle scale is tone one of the upper scale.

The scales are represented by figures as follows:

Upper.

Middle.

1 2 3 4 5 6 7 8

Lower.

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

FIRST MONTH.

First teach two or three pleasant, easy rote songs fit for opening or closing exercises; such as: "Happy Greeting to All" (Fountain Song Book No. 3), "The Old School Book" (Golden Thoughts in Song), etc., being careful to get songs adapted to the voices of the children.

These songs should not go higher than the fifth line of the staff nor lower than the second space below.

The Major Scale.—A knowledge of the major scale is the foundation upon which everything in the study of music depends.

How to Begin.—The teacher will speak the numerals 1, 2, 3, 4, 5, 6, 7, 8, articulating distinctly. The pupils will repeat the same until they can speak the numbers from 1 to 8 and from 8 to 1 exactly together with good articulation.

The teacher will then sing the numbers from 1 to 8, the pupils will sing from 1 to 8 in like manner. It may be necessary to sing a part of the scale as 1, 2, 3, 3, 2, 1, then 3, 4, 5, 5, 4, 3, then 5, 6, 7, 8, 8, 7, 6, 5, etc.

In this practice the teacher should sing and the pupils imitate.

When the pupils are familiar with the numbers, the syllables dō, rā, mē, fā, sōl, lā, tē, dō, should be practiced in the same manner.

SECOND MONTH.

For rote songs see "While the Morning Bells are Ringing" (Fountain Song Book No. 3), "Webb," "The Bridegroom" (Golden Thoughts in Song).

Review the first month's work. As soon as the pupils can sing the scale ascending and descending and are familiar with the numbers and syllables, dictation exercises should begin, viz: The teacher will say sing *one* of the scale. The pupils sing dō.

Teacher says sing *two*. Pupils sing *rā*.

Teacher says sing *three*. Pupils sing mē, etc., until the pupil can sing any tone in the scale which the teacher may name.

The pitch of C should be used in this practice.

In this work the teacher should have a good pitch pipe and test the pupils often.

The scale should be sung a great deal, using the syllables and numbers, syllables *lā, koo*, vowels *ē ā ō ä ö*, singly or two or more to each tone of the scale.

The whole alphabet sung to each tone of the scale is an excellent exercise for articulation.

Correct vocalization will prevent flatting from pitch.

THIRD MONTH.

For rote songs see "The Birds of Spring" (Golden Thoughts in Song), "Bright Morning, Hail" (Fountain Song Book No. 3).

Review the work previously done. With the scale-practice work out little tunes to be sung by syllable and by numeral names, as: with the tone *f* (first space) as one, sing the tones 1, 2, 3, 4, 5; 1, 2, 3, 4, 5, 4, 3; 3, 4, 5, 4, 3, 2, 1; 1, 2, 3, 2, 3, 4, 5; 1, 2, 3, 4, 3, 4, 5; 5, 4, 3, 2, 3, 2, 1; 1, 2, 3, 3, 4, 4, 5; 1, 1, 2, 2, 3, 4, 5, 1, 2, 3, 4, 5, 5, 5, etc., making out any number of little exercises of this kind. This work may last through the third month.

FOURTH MONTH.

For rote song see "Musical Bells" (Golden Thoughts in Song).

Review the practice of the scale.

Begin to develop different lengths of tones, (see rudiments) as: Tones one tap, or beat, long, and tones two taps long. A good way is to let the numeral alone, represent a tone one tap long.

The numeral with the curve over it as $\bar{3}$ or $\bar{2}$ or $\bar{1}$, etc., represents a tone two taps long (see rudiments).

Form little exercises and tunes as before, as 1, 2, 3, 4, 5, 6, $\bar{5}$, 5, 6, 5, 4, 3, 2, $\bar{1}$; 3, 4, 5, 5, 6, 6, $\bar{5}$, 3, 2, 3, 4, 3, 2, $\bar{1}$, etc.

After singing such exercises by syllables, by numerals and by *koo*, have the pupils hum with lips closed keeping the tongue away from the roof of the mouth.

If the tongue is left against the roof of the mouth the tone is thrown into the nose, which gives it a nasal effect.

Then use little couplets each line of which consists of seven syllables, as,

"Let us sing a little song
Time will quickly pass along."

Such couplets should be memorized by the children and applied to different exercises.

It is well to use two or three couplets each day so the children will not weary of them.

FIFTH MONTH.

For rote songs see "The Sleighing Glee" (Golden Thoughts in Song), "Gently Lead Us," "Father Whate'er of Earthly Bliss."

Review all the work that has been gone over up to this time. Form little exercises as last month and sing to different vowels, words and short phrases (seven syllables each).

Let all exercises begin and end on 1, 3, 5, or 8, of the scale. Never





begin nor end on 2, 4, 6, or 7. In singing exercises by syllables let the vowels be pure and distinct.

Introduce the *rest* (see rudiments) by using o, as: 1, 0, 2, 0, 3, 0, 4, 0, $\widehat{5}$, 5, 4, 0, 0, 3, 3, 0, 2, $\widehat{1}$.

As with the figures let the o alone represent a quarter rest, then o with a curve over it will represent a half rest (see rudiments).

SIXTH MONTH.

For rote songs see "The Streamlet" (Golden Thoughts in Song), "Our Nation" (Golden Thoughts in Song).

Continue the practice of exercises formed from tones of the scale, to vowels and phrases as before, from numbers on the board, with the greatest care for production of pure vowels, which are the basis of pure tones.

Teach the fact that the pitch of tones is represented by the staff (see rudiments) by placing the numbers on the staff, as:



Have pupils sing this exercise. Write the following tune on the staff on the board, using small figures, 1, 2, 3, 1, 3, 4, $\widehat{5}$, 5, 4, 3, 4, 3, 2, $\widehat{1}$. After singing this tune several times, cover the figures with heads of notes, sing as before. Place stems on the heads making the note one tap long (quarter note), except the 5 and 1 with a curve over them, these are two taps long (half notes). Here is a good place to begin tapping time. A good way is to have the children extend the right arm on the desk before them and tap lightly with the soft part of the end of the figures on the top of the desk.

Give one tap for each part of the measure. (For measure see rudiments.)

Raise the fingers slightly between the taps and let the difference between the strong and weak parts of the measure be expressed by loud and soft taps. Select easy songs of quarter and half notes in two-part measure and write on the board. Have the pupils separate into measures. Continue this practice to the end of this month.

SEVENTH MONTH.

For rote songs see "The Golden Rule" (Golden Thoughts in Song), "Flow Gently Sweet Afton" (Imperial Wreath of Song).

Continue the teaching of the different kinds of measures. Write the following exercise on the staff in half notes (♪) 1, 2, 3, 2, 3, 4, 5, 5, 4, 3, 2, 1, 2, 3, 3, 2, 1, 7, 6, 6, 5, 5, 6, 7, 1, 1, 7, 1, (see rudiments.)

Have the children separate into as many different kinds of measures as possible. Change the notes to quarters (♪) and separate as before. Change to eighths (♪) and separate as before. Change to eighths, quarters and halves and separate as before. Continue this work to the end of the month.

EIGHTH MONTH.

For rote songs see "Bright May Morning" (Golden Thoughts in Song), "Boat Song" (Fountain Song Book No. 3).

Review the year's work, making individual tests. Each child in the room except those who are tone blind (can not recognize the difference between one and five of the scale) should be able to sing alone, from the staff, little exercises.

Have the pupils draw the staff on slates or paper and write little exercises from dictation by syllable, or by sound, or from numbers on the board.

DRAWING.—First Year.

Alternation.—If the school program is crowded with recitations, the drawing may alternate with writing as explained on page 7 of this Course. Teach the drawing given below during 1897-8, and that for second year in 1898-9, and so continue to alternate the work of the two years.

To the Teacher.—The specific object of this course is to cultivate understanding of the type-forms of nature and art, by observing and drawing, and thus develop æsthetic judgment, care, neatness, and accuracy. The following definitions and suggestions will serve as references in following the order of study, but all teachers not especially trained for the work, should study some text and develop a critical sense for form and perspective. It is assumed that from fifteen to thirty minutes each day constitutes a lesson period.

During the first year of the course one exercise should be finished each day, by each pupil, and retained by the teacher.

Materials.—A block of paper 8 by 10 inches, from which each sheet may be removed, is advised. If a block of strained paper is used the necessity of drawing-boards is avoided. Any soft pencil will answer. Erasers should not be used except to clean the drawing when finished. For such purpose a soft porous rubber is best.

Models.—Lack of models is not sufficient excuse for neglect in this course. The course is so arranged that when leaf models are wanted they will be in season. Other models can be procured in plenty, from any household, and pupils can be relied upon to furnish their own models to a considerable extent. The work of the third, fourth, fifth, sixth, and seventh months of the first year demand that the models be placed at the level of the eye. This will necessitate some provision, and is unavoidable. The sequence of the course is based largely upon the relative position of the model to the pupil, hence instructions in this particular must be rigidly followed. The work of the course may be varied by occasional blackboard drawing.

The scale of the drawings should be changed occasionally to avoid confusion when changes are necessary. The general method of procedure in the drawing of any model is:

First.—Sketch very lightly the general direction of any axis or long lines which will help in the construction of the drawing.

Second.—With the guidance which such lines afford, sketch lightly the approximate of the form desired.

Third.—Trim and add to the approximate form until the true form is reached.

Fourth.—Add detail not already drawn as part of the general form.





Fifth.—Strengthen the desired outline and erase the light constructive and misplaced lines.

DEFINITIONS.

Outline drawing, Representation of an object by lines defining its extreme outside limits, and such abrupt changes in its surface as can be represented by individual lines.

Form, Shape represented by the outline of an object.

Construction lines, Lines drawn lightly and at the beginning, to help locate and form the real outline of the object. They may be imaginary guides.

Axes, Lines about which a form is symmetrical.

Convergence, Tendency to come together.

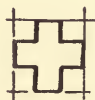
Foreshortening, Apparent shortening of a line or plane due to its change of angle with the direction of sight.

FIRST MONTH.

The exercises of the first month represented below are to be followed in the order given. The instructor will sketch them upon the blackboard on a large scale before the pupils, who will progress with their drawing as the instructor's drawing progresses. It is absolutely necessary that the drawing be entirely free-hand, and that all necessary construction lines be drawn in lightly before the real pattern is attempted. Each of the exercises is formed relative to a square drawn first. The purpose of this first month's work is to attain control of the pencil and to cultivate a strict sense of vertical, horizontal, and oblique direction upon the paper.

Straight and curved line exercises.

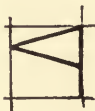
1. Series of four horizontal straight lines about 3 inches long and 1 inch apart.



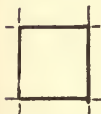
1. Square divided by lines parallel with the sides into small squares forming a cross.



2. Series of four vertical straight lines of same dimensions.



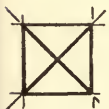
2. Pennant within a square.



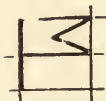
3. A true square, 4 inches on each side.



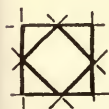
3. Kite formed on a square.



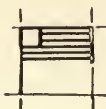
4. A true square with diagonals.



4. Pennant within a square.



5. A true square with lines connecting the middle-points of each side forming an oblique square within.



5. Flag within a square.



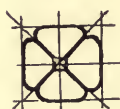
1. Fan within a square.



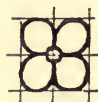
2. Heart-shaped fan within a square.



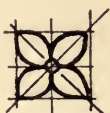
3. Egyptian lotus-form within square.



4. Rosette.



5. Rosette.



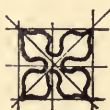
1. Rosette.



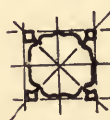
2. Unit of design.



3. Rosette.



4. Rosette.



5. Rosette.

SECOND MONTH.

Leaf Models.—1. Natural drawing in simplest outline of a simply-formed leaf, mounted flat and vertical upon a card.

2. Conventional drawing of the same leaf.

This drawing of leaves is to be followed through the second month. Pupils will collect and mount flatly upon cards, as they are needed, ten varieties of simply formed, symmetrical leaves for drawing models. The drawing of a natural leaf-form in outline will be followed with a conventional drawing of the same form on the next day. Draw straight axes, and block in the general form, before attempting the detail. Draw only the principal veins and serrations.

The conventional treatment consists of simplifying the natural drawing and making it perfectly symmetrical. (See cuts.)



THIRD MONTH.

Sphere and spherical models at level of the eye.—1. Drawing from a true sphere suspended or resting at the level of the eye.

2. Spherical fruit or vegetable at level of the eye.

The third month will be devoted to drawing from *spherical* models placed at the level of the pupils' eyes. The drawings may be made 4



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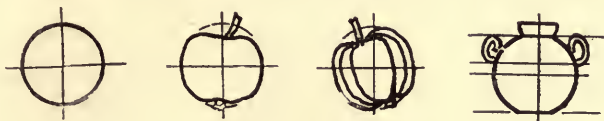
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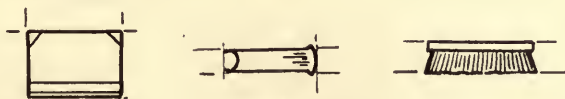
三十九

inches in diameter or larger, beginning with a true sphere which is represented by a circle. Most regular models should be used first and those having detail or irregularities later. Various fruits and vegetables together with spherical dishes and vases may be used. A vertical and a horizontal axis through the center should be drawn at first, followed by a true circle sketched in lightly. The deviations from a sphere which the model may have, may then be noted and represented accordingly. If a spherical vase has handles or legs they should be so placed that the pupil sees them in profile or omitted altogether.



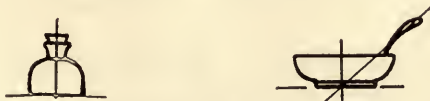
FOURTH MONTH.

Proportional drawing of rectangular models at level of eye.—For the daily exercises of the fourth month, rectangular objects will be placed *at the level of the pupils' eye* and in such a position that but *one face* or side of the object can be seen. The problem will consist of drawing that side in true proportion. Books, boxes, etc., may be used in this way. Great care must be exercised in the *placing* of models that but *one face* is visible to the pupil. Different faces of the same model may be used as different exercises, and in combination for one exercise. Relative height and width is first considered and represented in light lines, after which detail is sketched and the whole drawing emphasized.



FIFTH MONTH.

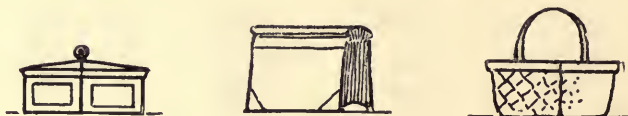
Proportional drawing of mixed models at level of the eye.—During the fifth month a variety of models of simple form will be used in a similar way to those of the fourth month. Vase and dish forms, baskets, boxes, etc., can be used, but always placed so that but *one side*, and *none* of the top or bottom is visible to the pupil. Follow the suggestions given at the beginning of the course concerning general methods of procedure.



SIXTH MONTH.

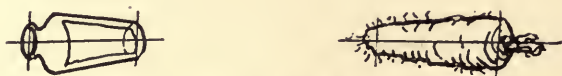
Rectangular models in oblique horizontal positions, at the level of the eye.—The sixth month exercises consist of drawing from rectangular models, placed at a level with the pupils' eyes so that the top or bottom is *not* seen, but turned in an *oblique horizontal* position exposing two sides to the pupils' view. This position suggests for the first time in the course, the element of perspective. The tendency of the farther vertical

corners to appear shorter than the nearer one, though in reality the same length, causes the lines of the upper and lower edges which connect the verticals to appear to converge or run together in the drawing. It will be found better to instruct this principle by noting the apparent difference of the farther and nearer verticals and the consequent convergence of the horizontals, than by any statement of the general convergence of lines. In addition to the convergence, the apparent shortening of the horizontal edges must be considered. This can best be realized by comparing the horizontal distance between the right and left corner verticals and the nearer middle one at the beginning of the drawing.



SEVENTH MONTH.

Cylindrical and mixed models in oblique horizontal positions, at the level of the eye, and showing side and end only.—The models differ in form but are placed similarly to those for the sixth month. The drawing of ellipses is the most difficult point of difference. For such positions the long axis of the ellipse, representing the end of any cylindrical model, will be vertical and the short axis horizontal and coincident with the axis of revolution of the model.



EIGHTH MONTH.

Drawing rectangular models below the eye, in horizontal positions, showing front and top sides only.—The model will be placed so that the right and left corners are equally distant from the pupil's eye so that the front and rear edges will be drawn horizontal, and the retreating edges will meet over the center of the model.



DRAWING.—Second Year.

Alternation.—See suggestions at the head of drawing first year, and note that what is given below is to be taught in 1898-9, and each alternate year thereafter.

It is presumed that each problem of the second year may demand several class sessions for completion.

FIRST AND SECOND MONTHS.

1. Drawing of blossoms or sprigs mounted upon cards.
2. Conventional units derived from natural drawing of the previous lesson, arranged in patterns.

REIGN OF KING CHARLES THE FIRST
IN THE YEAR OF HIS REIGN 1649

BY JOHN BURNET
BISHOP OF SALTSMAN

LONDON
Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard, 1692

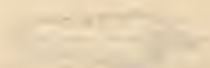
THE HISTORY OF THE
REIGN OF KING CHARLES THE FIRST
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The drawings of these two months are to be made from mounted sprays of leaves or flowers similar to the second month of the first year.

The natural drawing of such a mounted spray is followed by a conventional drawing arranged into a pattern.



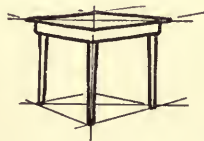
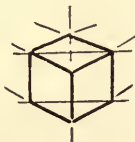
THIRD MONTH.

1. Cubical and rectangular models in symmetrical positions below the eye.

2. In any position.

To bring the difficulties of convergence and foreshortening into proper sequence it is best to use models having two equal dimensions, i. e. square on one side, for the first two weeks of this month's work. In addition to this they should be placed so that the student has a symmetrical view with the right and left sides and angles alike. After the idea of convergence and foreshortening is well grounded, together with a fair ability at determining angles, other rectangular solid models may be used in other positions.

The Principle.—*All lines of a model which are parallel in the model, tend to come together toward their farther ends in the drawing, is the fundamental rule of this month's work, and should be thoroughly understood.*



FOURTH MONTH.

Cylindrical models in any position will be used during this month. The one principle so important to the drawing of cylindrical models will be drilled upon. *The longest axis of the ellipse which represents the head or end of any cylindrical body is always drawn at right angles to the axis of revolution of the body.*

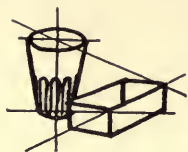
For models use vases, round baskets or boxes, vegetables; such as carrots, beets, corn, etc. The axis of revolution is the first line to be drawn, then the major axes of the ellipses if any. All ellipses, whether wholly seen or not, should be sketched, that the visible part may take its proper form.



FIFTH AND SIXTH MONTHS.

Groups of models will be used during these two months. In addition to the principles of previous lessons the method of *combining objects* in proper relation is important. The relation of several models in a group

must be considered at the beginning of the drawing, or much labor will be lost on finding that the carefully drawn, individual models do not take their proper place. This is accomplished by sketching a light but accurate outline for the group as a whole before any detail is attempted. Begin with very simple groups of two or three simple models.

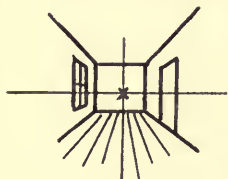


SEVENTH AND EIGHTH MONTHS.

General Perspective.—During the last two months of the course the general principles of perspective governing the long lines of interior views of a rectangular room will be studied. Very simple sketches of three views will be drawn. The proper conditions exist in any rectangular room and as much or as little of the detail may be shown as desired.

1. A view in which the pupil faces one wall of the room.

When looking squarely at the wall he faces, the pupil sees the meeting point of all lines which run in the direction he is looking. The first step is to draw, at a small scale, perhaps two inches wide, the rectangle which represents the end of the room. Then within this rectangle locate the meeting-point of the lines running in the direction he is looking. After this point is located, draw the lines representing the angle where the walls meet the ceiling and the



floor, through the corners of the rectangle. All other lines running in the direction the pupil faces, as floor-boards, etc., meet at the one vanishing point in front of him.

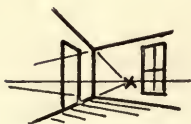
2. A view in which the pupil faces one corner from a position equally distant from the two side walls.

Several pupils may be arranged in line with each corner of a room for this problem. First draw a horizontal line of indefinite length across the paper, to represent the horizon at a level with the eye. At the center of the paper draw a vertical line, perhaps 2 inches long, crossing the horizon, and divided by it in the same proportion that the horizon divides the vertical corner of the room. This vertical represents the vertical corner in



front of the pupil. With the length assumed to represent this vertical as a measure, lay off the distance from the corner to points on each wall at right angles from the position of the pupil. These points are the vanishing or meeting points of the lines where the side walls meet the ceiling and the floor.

3. A general view in which the pupil has a position facing between the corner and wall and is nearer one wall than the other. The method is similar to the second problem except that the vertical representing the corner of the room is not in the center of the paper, but to one side. In this drawing one vanishing point will probably fall off the drawing paper, but can be approximated.







LESSONS IN MORALS AND MANNERS.

The lessons in Morals and Manners here given are taken verbatim from White's School Management, by special permission from the author, Dr. E. E. White, of Columbus, Ohio, and from the publishers, The American Book Company. The suggestions are necessarily brief; but teachers are referred to the book named above for a very complete and systematic discussion of the importance of moral training, ends to be attained, guiding principles, method, and an excellent collection of materials for moral lessons, consisting of stories, fables, literary gems, maxims, proverbs, etc.

It is hoped that what is here given will cause teachers to read pedagogical works which treat of moral training, and that instruction in this very important subject may be lifted to a higher plane than it has occupied in the past.

MORAL ELEMENTS IN THE SCHOOL.

1. The discipline of a good school affords a valuable moral training, this being specially true when desired results are secured by an appeal to high and worthy motives, and by conscientious training in the cardinal virtues of truthfulness, kindness, and justice.

2. All good teaching has a potent moral element.

3. The several branches of study taught in school have a valuable moral element, this being especially true of literature, history, natural science, and music.

4. Back of all effective instruction in duty there must be a true life. "Words have weight," says a writer, "when there is a man back of them." *The one vital condition of effective moral instruction is character in the teacher.* Truth translated into human experience not only wins intellectual assent, but it touches the heart. Noble sentiments have their most potent moral influence when they dwell regularly in the teacher's life. If he would banish falsehood and kindred vices from his pupils' hearts, he must first exorcise them from his own. If he would make them truthful, gentle, kind, and just, his own life must daily exhibit these virtues.

MORAL LESSONS IN THE SCHOOL PROGRAM.

If instruction be a valuable element in moral training, it would seem to follow that it should not be crowded into a corner and given the "odds and ends" of school time. It should have an assigned place in the weekly program, and thus receive its due share of attention. It is not meant that all moral instruction should thus be regulated, but that incidental instruction should be supplemented by instruction of a more progressive and systematic character. It is not a question of choice between incidental and regular instruction, but *each* should be faithfully used, the one supplementing the other. The pupils need both and each in full measure.

1. **CLEANLINESS AND NEATNESS.**—1. Body, hands, face, hair, nails, etc. 2. Clothing, shoes, etc. 3. Books, slates, desk, etc. 4. Everything used or done.

2. **POLITENESS (*Children*).**—1. At school. 2. At home. 3. At the table. 4. To guests or visitors. 5. On the street. 6. In company.

3. GENTLENESS.—1. In speech. 2. In manner. 3. Rude and boisterous conduct to be avoided. 4. Patience, when misjudged. 5. Docility, when instructed.

4. KINDNESS TO OTHERS.—1. To parents. 2. To brothers and sisters. 3. To other members of the family, and friends. 4. To the aged and infirm. 5. To the unfortunate. 6. To the helpless and needy. 7. The Golden Rule.

Forms.—(1) Sympathy; (2) deference and consideration; (3) helpfulness; (4) charity; (5) no cruelty or injustice.

5. KINDNESS TO ANIMALS.—1. To those that serve us. 2. To those that do not harm us—the killing of birds. 3. The killing of those that do us harm. 4. The killing of animals for food. 5. Cruelty to any animal wrong.

6. LOVE.—1. For parents. 2. For brothers and sisters. 3. For other members of family, and friends. 4. For teachers, and all benefactors. 5. For one's neighbor—"Thou shalt love thy neighbor as thyself." 6. For God.

7. TRUTHFULNESS.—1. In words and actions—"Without truth there can be no other virtue." 2. Keeping one's word—promises to do wrong. 3. Distinction between a lie and an untruth. 4. Telling what one does *not know to be true*. 5. Prevarication and exaggeration. 6. The giving of a wrong impression, a form of falsehood. 7. Telling falsehoods for fun.

8. FIDELITY IN DUTY.—1. To parents—to assist, comfort, etc. 2. To brothers and sisters—older to assist, etc., younger. 3. To the poor and unfortunate. 4. To the wronged and oppressed. 5. Duty to God.

9. OBEDIENCE.—1. To parents. 2. To teachers and others in authority. 3. To law. 4. To conscience. 5. To God.

Nature.—(1) Prompt; (2) cheerful; (3) implicit; (4) faithful.

10. NOBILITY.—1. Manliness. 2. Magnanimity and generosity. 3. Self-denial and self-sacrifice for others. 4. Bravery in helping or saving others. 5. Confession of injury done another.

11. RESPECT AND REVERENCE.—1. For parents. 2. For teachers. 3. For the aged. 4. For those who have done distinguished service. 5. For those in civil authority.

12. GRATITUDE AND THANKFULNESS.—1. To parents. 2. To all benefactors. 3. To God, the giver of all good.

13. FORGIVENESS.—1. Of those who confess their fault. 2. Of those who have wronged us. 3. Of our enemies. 4. Generosity in dealing with the faults of others.

14. CONFESSION.—1. Of wrong done another, manly and noble. 2. Denial of faults—"The denial of a fault doubles it." 3. Frankness and candor.

15. HONESTY.—1. In keeping one's word. 2. In school and out of school. 3. In little things. 4. Cheating, ignoble and base. 5. "Honesty is the best policy." 6. Honesty is right.

16. HONOR.—1. To honor one's self; i. e., to be worthy of honor. 2. To honor one's family. 3. To honor one's friends. 4. To honor one's home. 5. To honor one's country.



17. **COURAGE.**—1. True courage—daring to do right and to defend the right. 2. False—daring to do or to defend the wrong. 3. In bearing unjust censure or unpopularity. 4. In danger or misfortune. 5. Heroism.

18. **HUMILITY.**—1. True greatness—not blind to one's own faults. 2. Modesty becoming to the young. 3. Avoidance of pride and vanity. 4. Self-conceit, a sign of self-deception. 5. True humility, not servility or time-serving.

19. **SELF-RESPECT.**—1. Not self-conceit—based on conscious moral worth. 2. Not self-admiration. 3. Resulting in personal dignity. 4. Distinction between self-love and selfishness. 5. "Be not wise in your own conceit."

20. **SELF-CONTROL.**—1. Control of temper. 2. Anger, when right. 3. Avoidance of hasty words—"Think twice before you speak." 4. Self-restraint when tempted. 5. Self-restraint under provocation—"Bear and forbear." 6. Rule your own spirit.

21. **PRUDENCE.**—1. In speech and action. 2. When one may be misunderstood. 3. Respect for the opinions of others. 4. "Judge not, that ye be not judged."

22. **GOOD NAME.**—1. Gaining a good name when young. 2. Keeping a good name. 3. Keeping good company. 4. Reputation and character.

23. **GOOD MANNERS** (*Youth.*)—1. At home. 2. In school. 3. In company. 4. When a visitor or a guest. 5. In public assemblies. 6. Salutations on the street. 7. Politeness to strangers. 8. Trifling in serious matters, to be avoided.

24. **HEALTH.**—1. Duty to preserve health. 2. Habits that impair health, foolish as well as sinful. 3. The sowing of "wild oats"—"What a man sows, that shall he also reap." 4. The body never forgets or forgives its abuse. 5. An observance of the laws of health, a duty.

25. **TEMPERANCE.**—1. Moderation in the indulgence of appetite in things not harmful. 2. Total abstinence from that which is injurious. 3. Dangers in the use of alcoholic liquors. 4. Courage to resist social temptations to indulgence. 5. Injurious effects of tobacco on growing boys. 6. Cigarette smoking by boys a serious evil.

26. **EVIL HABITS.**—1. Those that injure health. 2. That destroy reputation. 3. That dishonor one's self and family. 4. That waste money. 5. That take away self-control. 6. That incur needless risks, as gambling. 7. That are offensive to others, etc.

27. **BAD LANGUAGE.**—1. Profanity, foolish and wicked. 2. Obscenity, base and offensive. 3. Defiling books or other things with obscene words and characters, a gross offense. 4. The use of slang, vulgar and impolite.

28. **EVIL SPEAKING.**—1. Slander a serious offense. 2. Tale bearing to injure another. 3. Repeating evil which one has heard without knowing that it is true. 4. "Thou shalt not bear false witness against thy neighbor."

29. **INDUSTRY.**—1. Labor a duty and a privilege. 2. Right use of time. 3. Manual labor honorable. 4. Self-support gives manly independence. 5. Avoidance of unnecessary debt. 6. When begging is right. 7. An opportunity to earn a living by labor, due every one.

30. **ECONOMY.**—1. Saving in early life means competency and comfort in old age. 2. Duty to save a part of one's earnings—"Lay up something for a rainy day." 3. Extravagance wrong—"A spendthrift in youth, a poor man in old age." 4. The hoarding of money needed for comfort or culture or charity, wrong. 5. Charity—"No man liveth unto himself."

31. **PATRIOTISM.**—1. Love of country. 2. Reverence for its flag. 3. Respect for its rulers. 4. Its defense when necessary. 5. Regard for its honor and good name.

32. **CIVIL DUTIES.**—1. Obedience to law. 2. Fidelity in office—bribery. 3. Honor in taking an oath—perjury. 4. Duty involved in the ballot—buying or selling votes. 5. Dignity and honor of citizenship, etc.

OBSERVATION WORK.

To the Teacher.—The pupils need no text-books in the work outlined in zoology, botany, and physics. In fact, books would do more harm than good. The chief object for the teacher to keep in mind is to get the children thoroughly interested in the study of nature and its beauties. To do this it is necessary that they come directly in contact with the objects talked about, that they see and feel for themselves; that they themselves perform the experiment and draw the conclusion. The teacher should carefully direct the investigations of the pupils, and not tell or show too much, even if the work does progress slowly. If thorough interest is awakened in the subject matter taught, the pupils will be made thoughtful and observant along these lines and will be continually acquiring useful knowledge. Thus the chief objects will be accomplished. Representation of the simpler forms by drawings, compels a more careful study, and also affords a means of preserving many results, otherwise lost.

ZOOLOGY.

Alternation.—Carefully read what is said about "Alternation of Work" in the introduction to this Course pages 6 and 7 and have a class in zoology in 1897-8; a class in botany in 1898-9; and a class in physics in 1899-1900.

FIRST MONTH.

In what places have you found insects? (Under stones, in walls, and grass, on leaves, etc.) What were they doing? (Observe them repeatedly.) What means have insects of escaping from their enemies? (Observe their color, sting, manner of flight, etc. Give numerous examples.) Study butterflies especially. What do they eat? Where and how do they get it? Do they visit all flowers? Where do they stay at night?

SECOND MONTH.

Collect the larvæ of moths (large green, and brown worms) and of butterflies (caterpillars) and put them in small boxes covered with mosquito netting. Feed them with fresh leaves from the plant on which they were found. Note the changes daily. Keep them through the winter and note the changes in spring. What becomes of insects during cold nights? What becomes of butterflies? Of bees? Of grasshoppers? Of flies? Can you find any insects preparing to live through the winter? Which ones seem most intelligent? Why?

THIRD MONTH.

What birds are with us now? Were they here all summer? What is their food? What substitute for migration do many animals have? Give examples. (Hibernation.) Search for insects under stones, leaves, etc.

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Have they lined their nests in any way to protect themselves from cold? What changes do we make in our clothing as winter approaches? (In material, color, thickness, etc.) Do animals make similar preparation for winter? Examine feathers of birds and note their uses. Examine covering of dogs, cats, horses, etc.

FOURTH MONTH.

Can any of the summer birds be found? If so, what are they? Have you found any newcomers? Where have they come from? What is their food? Do they sing? Are they building nests? Is there any insect life abroad? Watch sharply on warm days and in sheltered places. Hunt for earthworms. How deep do they burrow into the ground? In what condition do fish, crayfish, and frogs spend the winter? Look for these under leaves, and in mud along sides and in bottom of ponds. Contrast the dog and cat in drinking; in walking. How does it happen that the cat can move so much more quietly than the dog? Why is that necessary? (Note the difference in the motions of the trunk and in the flexibility of the joints as they step.)

FIFTH MONTH.

Why have not all animals migrated? Is it due to superior or to less intelligence, or to neither? What wild animals are spending the winter with us? Which ones store up food for winter? Where do they obtain it? What do the others eat? How do these animals protect themselves from cold? How does a rabbit run? How does its running differ from the running of a cat or a dog? How does a cat differ from a rabbit in making a spring? In which are the hindquarters, compared with the forequarters, the better developed, in the rabbit or the cat? Compare both of these with the dog. Talk about the habits of our wild animals; e. g., where they make their homes, how they drink, etc.

SIXTH MONTH.

Compare the food of cow, cat, bird, etc.; also their methods of taking hold of it. How are these animals differently constructed so as to seize, chew, and digest such food? Which ones make use of their fore limbs in managing their food? Note the use of the lips when drinking and eating; also the position and shape of the teeth and their use. Note also the use of the tongue and the movements of the jaws. Which is fitted to eat the shortest grass, the cow, horse, sheep, or goat? Why? What effect does that have upon the kind of pasture men give to these animals? See geographies.

SEVENTH MONTH.

Let each pupil keep a record of the return of birds. Have any of the winter birds disappeared? Is the plumage of those that have returned changed any? Do they sing? What is the food of the birds that return earliest? Do they begin nesting immediately? Do they repair and use old nests? What are the most serious dangers that threaten those that first return? What kinds of insects are abroad this month? Where do they stay and what are their habits? What enemies have they and upon what do they depend for safety, defense, concealment, and flight? What have you observed about the earthworms? Examine the cocoons gathered

last fall, or such as are found upon twigs of trees, bushes, etc. Do they show any signs of life? (Study the silk industry in this connection, if possible.)

EIGHTH MONTH.

Why are earthworms so abundant after a rain? What is the meaning of the small heaps of earth at the entrance of a burrow? How many burrows are there in a square yard of ground? Count several and find the average. Carefully clean away the little heaps of earth from about the burrows in a square yard and next morning gather all that has been cast up during the night. Dry and weigh it. At the same rate how much would be brought to the surface on one acre in a single night? In one month? What are the effects upon the soil? Upon objects lying upon the ground? Find the depth of a burrow and make a diagram of it. What is the food of earthworms? Their enemies? Their means of protection and methods of locomotion? Observe birds, their modes of flying, their speed, places of nesting, etc. Sketch a few of the common insects. Note their food, number of their wings, their means of protection, etc.

BOTANY.

Alternation.—In observation work the school should study zoology in 1897-8, botany in 1898-9, and physics in 1899-1900, and so continue to alternate.

FIRST MONTH.

Have trees finished their growth for this season? How can you tell? Is the same true of other plants that you know? Have old trees grown as rapidly as young trees? Name the trees that grow fastest. Which are the most beautiful trees? In what respect are they beautiful? What colors are most common among ripened fruits? Why? In what way do fruits protect themselves in order that the seeds may become ripe? Collect seeds and fruits of all kinds; dry and preserve them carefully in envelopes or bottles.

SECOND MONTH.

Examine twigs to see if there is much sap in them. What has become of the sap? What causes the leaves to fall? Is it fortunate for the trees that they fall? Why? Continue to collect seeds, nuts, etc. How have plants provided for distribution of seeds? Note contrivances by which seeds of weeds are scattered. Examine dandelion, thistle, burdock, etc. Of what help is the wind to seeds? Give examples. How do animals help to distribute seeds?

THIRD MONTH.

Examine the rootlets of several plants. When is the proper time for transplanting trees? What special care should be taken if they are transplanted at other seasons? Can it be said that trees hibernate? Why? What provision have trees made for the coming year? How about annuals? Biennials? Perennials? Do the first frosts kill any of the newly grown twigs? Examine as many different kinds of trees as possible. How does the number of seeds produced by plants that are killed by cold each year compare with the number produced by plants that live from year to year? Give numerous examples. Which of these two classes seems to have the better mode of scattering its seeds? Take plenty of time in





working up this topic so that a large number of examples may be cited by the pupils.

FOURTH MONTH.

During a hard freeze examine the smaller twigs. Are they frozen through? How protected? Open the buds; are they frozen? How are they protected? Are they wet through when it rains? Note the shape of trees. Draw an outline of several common ones. Which ones are in least danger from being broken by sleet and strong winds? Why? (Note method of branching, strength of wood, etc.) What is the wood of the trees used for? How is it prepared for use? (Read about wood manufactures, lumbering, etc.) Note the rings in the cross section of a branch; what has caused them? Compare the wood of various trees as to its hardness, porosity, color, odor, weight, usefulness, etc.

FIFTH MONTH.

Examine a large number of buds of different trees to discover if they are dead. Make collection of buds and find what per cent have been killed. Does the bark of trees have rings? (Examine trees with thick bark to find out.) What is the cause? Why are there not so many rings to be found in the bark as in the wood? Why does the bark become split so badly? Of what use to the tree is the old, dead bark? How does the bark of a single tree vary in color? What is the cause? Make a collection of cross sections of trees; also of longitudinal sections. How do the two differ in appearance? Can you recognize a tree by its bark?

SIXTH MONTH.

Is there any flow of sap in trees at this time? When are maple syrup and sugar made from the maple? Why then? How are they made? Where? Do you find any twigs that are dead, as well as buds? Examine some evergreens of different kinds; do they ever shed their leaves? When? Are the leaves that remain on the trees living? Can you see any regularity in their arrangement? Are the leaves grouped in the same way in different kinds of evergreens? Notice the pitchy substance under the bark; how does the tree make use of it to heal wounds? How does it prevent fence posts from rotting rapidly? Find how pitch, turpentine, resin, and tar are manufactured. Where?

SEVENTH MONTH.

Can you by examination, determine the extent to which the roots of trees are spread? How does it compare with the spread of the top? On what part of the roots are the rootlets mainly found? Where, then, would it be best to pour water when watering trees? Where do the leaves of trees manage to drop most water when it rains? Are the buds of trees changing any? Cut the twigs of several trees to see if they bleed. Why do men girdle trees in order to kill them? Where does growth take place in a tree? What part of a tree is really alive, then? When would you trim trees? Why? Show process of germination by planting seeds in pots, boxes, etc., or in cotton on water in glasses.

EIGHTH MONTH.

Notice the arrangement of buds. Are all those on a single tree equally advanced in development? Keep a record of the dates when trees blossom

and when they put forth their leaves. What common flowers do you know? Keep a record of the dates of their appearance. How many parts do flowers have, and what are the parts for? How are insects of assistance to flowers? Plant some of the seeds gathered last fall. Where do little plants find their food which supports them until their roots and leaves are sufficiently developed to feed them? Make drawings of the plants at different stages of growth. In some place, not likely to be disturbed, mark off a square yard of ground and count the different kinds of plants it produces. Can you tell where the seeds for so many plants come from?

PHYSICS.

Alternation. — In observation work the school should study zoology in 1897-8, botany in 1898-9, and physics in 1899-1900, and so continue to alternate.

FIRST MONTH.

Place small amounts of water in several differently shaped vessels and allow them to stand exposed to the air for several days. What becomes of the water? Under what circumstances will it evaporate most rapidly? Note the varying effects of a wide extent of surface; of currents of air passing over the surface; of direct sunlight, darkness, heat, cold, etc. What causes mud to dry up? What becomes of dew, frost?

SECOND MONTH.

How does water change its form when it evaporates? What causes it thus to change its form? What are the effects of heat? Of cold? Is vapor pushed up or pulled up? Explain by having children perform numerous experiments. Can you account for the formation of clouds? What is the history of a drop of water? Of what use is wind in this connection?

THIRD MONTH.

What causes dew? Frost? Why does the earth become cooler after sunset? Explain the process by which water cools. Which cools faster, land or water? What effect must that have upon climate? Give examples. Is the formation of dew or frost dependent upon clearness of night? (Keep a record before answering). Why is it so? What causes wind? Have children perform numerous experiments to explain this.

FOURTH MONTH.

Have children perform experiments showing that air takes up space. For instance, push an open bottle, mouth downward, into water. Note whether or not the water enters and why. Have several experiments performed showing that air has weight, is exerting pressure. For instance, heat the bottle and push it into water, mouth downward. Hold it there until it cools and observe what happens. The cause? Let experiments show why water rises in a common pump. Is it pushed up or pulled up? What are the valves for? Explain force pump. How may you keep the pump from freezing?

FIFTH MONTH.

Is there any air in water? How can you tell? What takes place when water is heated in a pan? Why is it fortunate that water expands before it freezes? What are thermometers for? How would you make





one? How is it possible to have more than one kind of thermometer? (Fahrenheit and Centigrade). Why should a person have a thermometer in a room? Where should it be placed? Why? Are there currents of air in a room? (Try the space over a stove, or a lighted lamp; also the cracks at doors and windows. Use a lighted lamp or taper in looking for a draught). What is the cause of these movements of air in a room? Can you account for their direction?

SIXTH MONTH.

Compare the heating of air in a room with the heating of water in a pan. Also with the heating of water in a lake. In what part of a room (top or bottom) does the thermometer rise higher? Why? How would you ventilate a room? How test the purity of air in a schoolroom? (By the odor when a person enters from fresh air outside). How are furnaces made to heat houses? Do they provide at all for ventilation? Of what help may a fireplace be for ventilation?

SEVENTH MONTH.

What proofs are there that the earth attracts objects? What advantages do you see in the fact that objects have weight? Let it be seen, by experiments, what is meant by *centre* of gravity. What causes pendulums to swing? What facts can you discover by experimenting with pendulums? How would you regulate a clock by its pendulum?

EIGHTH MONTH.

Have children perform experiments showing what is meant by specific gravity. How is a knowledge of this subject of any use? Magnetize a large knitting needle by rubbing it over the poles of a magnet and make a compass of it. Why does the needle point in the direction in which it points? What useful purposes can you think of to which a compass may be devoted? What two directions does it give directly? What two indirectly? Make use of the needle in determining the direction of the wind; of the road home; the directions toward different places, buildings, etc., in the neighborhood.



HIGHER COURSE OF STUDY.

Alternation.—This Course is recommended for advanced country schools and for the smaller graded schools. Where but few teachers are employed, it is impossible to carry the work of the more extended courses. But by following the plan of alternation of work as recommended on page 7 of this Course, it is believed that these smaller graded schools can not only do the work of two years here outlined, but can also add a third year for graduation.

FIRST YEAR.

TEXT-BOOKS.—General History, Algebra, Physiology, Botany, and Book-keeping.

GENERAL HISTORY.—History of Ancient Peoples.

ALGEBRA.—First half of text-book.

PHYSIOLOGY.—Physiology completed.

BOTANY AND BOOKKEEPING.—See note at head of "Botany and Bookkeeping."

GENERAL HISTORY.

NOTE.—To understand history, the geography should be thoroughly learned. The teacher should not fail to have maps carefully studied.

FIRST MONTH.

History, definition, scope, divisions. The historic race, Aryans, Semites, Hamites. Egypt, Old Empire, Middle Empire, New Empire, decline of Egypt, civilization, king, priests, soldiery, common people, hieroglyphics, literature, monuments, industries, religion, embalming, everyday life.

SECOND MONTH.

Babylonia and Assyria, Chaldea, Nineveh and its conquering kings, society, manner of writing, literature, monuments, walls, temples, hanging gardens of Babylon, character of people, religion, scenes from life. Phoenicia, settlements, Carthage, literature, arts and inventions, religion, Baal and Moloch.

THIRD MONTH.

Judea, Jews, Abraham, Joseph, Moses, the exodus, conquest and occupation of Palestine, the Kingdom of David, its divisions, idolatry introduced, the captivity, the restoration, religion and learning, the Hittites. Media and Persia, Cyrus, Cambyzes, Darius, Persian society, writing, Zoroaster, education of Persians, monuments and arts, character and customs, religion, Magi, the army. India, Hindoos, society, literature, the Sanscrit, Brahminism, Buddhism. China, the great wall, why built, Genghis Khan, Marco Polo, civilization, literature, religions. Greece, geographical features, early inhabitants, Hellenes, legendary history, government, Dorian migration, colonies, Sparta, Lycurgus.

FOURTH MONTH.

Athens, early history, Draco, Solon, the tyrants, democracy. Cause of Persian wars, Marathon, Miltiades, Themistocles and Aristides, Xerxes, Thermopylæ, Leonidas, Salamis, Plataea, Mardonius, Pausanias, Mycale, Pericles, Cimon, the long walls. Peloponnesian war, causes, siege of



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Platæa, Alcibiades, expedition to Sicily, fall of Athens, the thirty tyrants, retreat of the ten thousand, Spartan and Theban rule, Agesilaus, Epaminondas. Macedonia, its people, Philip, Demosthenes, Chæroneia, Alexander, conquests, Granicus, Issus, Tyre, Egypt, Arbela, Babylon, results. Successors, Ptolemy, Lysimachus, Seleucus, Cassander.

FIFTH MONTH.

Greek civilization, society, classes in Sparta, Greek literature, poetry and history, Homer, Hesiod, Pindar, Sophocles, Euripides, Xenophon, Thucydides, Herodotus, Pythagoras, Socrates, Plato. Schools of philosophy, Academic, Peripatetic, Epicurean, Stoics. Libraries, education in Athens, education in Sparta. Architecture, Doric, Ionic, Corinthian. Religion and Mythology, festivals, marriage customs, burial, weapons, life scenes.

SIXTH MONTH.

Rome, founding, early inhabitants of Italy, the Latins, Etruscans, Alba Longa, government of Rome, Sabine invasion, Tarquins, the republic. Patricians and Plebeians, secession of the Plebs, agrarian law, the decemvirs, twelve tables, Gallic invasion, Cincinnatus, Pyrrhus. Punic wars, Carthage, Hiero, Regulus, Sicily, Hannibal, Fabius, Cannæ, Scipio, Rome conquering Greece, Syria, Spain, effect of conquest on Roman people.

SEVENTH MONTH.

Civil wars, the Gracchi, Jugurtha, Cimbri and Teutons, Mithridatic wars, Sulla, Marius, Cinna, Gladiatorial war, Catiline's conspiracy, the triumvirate, war between Cæsar and Pompey, assassination of Cæsar, second triumvirate, Philippi, Cleopatra, war between Antony and Octavius. The empire, the Germans, Varus, birth of Christ, Tiberius, Caligula, Nero, Vespasian, Titus, Domitian, the good emperors, decline of the empire, inroads of the barbarians, fall of the empire. Roman civilization, society, army, literature, Virgil, Horace, Cicero, Livy, Seneca, education, monuments and art.

EIGHTH MONTH.

Roman character, religion, games and festivals, gladiators, marriage, burial, dress, a day in Rome, a Roman house, the house of Pansa, a triumph, funeral honors to an emperor. Review work gone over. Pay special attention to the geography, locating important places, countries, towns, and rivers.

ALGEBRA.

FIRST MONTH.

Literal Quantities.—Ideas and expression, symbols and signs, coefficients and exponents, numerical quantities, literal quantities, positive and negative quantities. Addition, arithmetical sum, algebraic sum, monomial, binomial, polynomial, similar terms, dissimilar terms, arithmetical difference, algebraic difference, subtraction.

SECOND MONTH.

Multiplication and Division.—Multiplication, expression of products, exponents, signs, rule for signs, definition of terms in multiplication, arithmetical product, algebraic product. Division signs and rules for

signs, exponent zero, arithmetical division, algebraic division, definition of terms, division of monomials, division by monomials, division by polynomials. Definition of equation, member, a known quantity, unknown quantity, axioms, solving equations, verifying equations.

THIRD MONTH.

Complete addition of all forms of polynomials; also of subtraction. Study symbols of aggregation, especially when preceded by the minus sign. Do not forget that the horizontal line between the numerator and denominator of a common fraction is a symbol of aggregation. Complete multiplication and division of polynomials. Study simple, simultaneous, independent equations. Elimination, elimination by addition or subtraction. Involution, power, degree, exponent, even powers, negative powers.

FOURTH MONTH.

Factors.—Composite quantity, and prime. Product of an even number of factors, of an odd number, square of a binomial, product of the sum and difference of two numbers, factoring a polynomial, factoring difference of squares, the sum or difference of equal odd powers of two quantities, a trinomial. Highest common divisor. Lowest common multiple.

FIFTH MONTH.

Fractions.—Arithmetical and algebraic fractions, value, apparent sign, integral and mixed quantities. Proper, improper, and compound fractions, reciprocal. Reduction, definition, methods, principles, changing signs of terms. Reduction of fractions to lowest terms, mixed numbers to improper fractions, improper fractions to integral or mixed forms, fractions to similar forms. Addition, subtraction, multiplication, and division of fractions. Complex fractions, and involution of fractions.

SIXTH MONTH.

Equations.—Numerical, literal, simple, quadratic equations. Transformation of equations, transposition, clearing of fractions, solution of equations, problems, statements. Solve many equations and problems. Be careful to make full and clear written statements of all the conditions of a problem before attempting to form the equation.

SEVENTH MONTH.

Elimination.—Study elimination by substitution, by comparison, solution of literal equations, study general problems. If students do not become as familiar with general problems as with special ones, as familiar with the literal notation as with the numerical, then you may be sure the algebraic work is not complete.

EIGHTH MONTH.

Review.—Learn definitions, solutions, rules, and principles thoroughly. Do not be content with an understanding at the time of recitation, but fix all algebraic knowledge as firmly in the mind as the alphabet. This is the only sure test of mathematical teaching.

PHYSIOLOGY.

FIRST MONTH.

Bones, uses and forms, composition, structure, growth, repair, of head, of trunk, perfection of the spine. How the skull articulates; ribs; bones of the upper and lower limbs. Give special attention to structure of hand. Diseases and deformities of bones. Muscles, use, contractility, arrangements, kinds, structure, tendons.

SECOND MONTH.

Muscular sense, exercise, necessity for, time, kinds of, diseases of muscle. Skin, structure, complexion. Hair. Nails. Mucous membrane, structure, fat. Teeth, kinds, structure, diseases of, preservation of. Oil and perspiratory glands, perspiration. Hygiene of skin, bathing, diseases of skin.

THIRD MONTH.

Organs of respiration, structure of. Capacity of lungs. Need of air. Action of air in lungs. Ventilation, necessity for. How ventilate. Diseases of organs of respiration. Organs of the voice, larynx, vocal cords, speech, vocal sounds. Blood, composition and uses, coagulation. Heart, movements and structure.

FOURTH MONTH.

Arteries, veins, capillaries, structure compared. Circulation, lesser, greater. Heat of body, distribution, and regulation of. Lymphatic circulation. Diseases of circulation, congestion, inflammation, bleeding. Alcohol, how made, varieties and properties of, destructive to animal and plant life. Effects of, upon circulation, heat, membranes, blood, lungs.

FIFTH MONTH.

Food, necessity for, does what, kinds needed. Digestion, object of, general plan of. Mastication and insalivation. Gastric digestion. Intestinal digestion. Absorption. Food, kinds of considered. Coffee and tea. Cooking. Quantity and kinds of food under different conditions. Diseases of digestive organs. Alcohol, relation to digestion, effects upon liver, kidneys. Does alcohol impart heat and strength? Alcohol appetite.

SIXTH MONTH.

Nervous system, structure of brain, cerebrum, cerebellum, spinal cord, nerves, spinal, cranial. Sympathetic system, crossing of cords, reflex action, brain, exercise necessary, sleep necessary, sunlight. Alcohol, effects upon nervous system, four stages of, upon brain, influence upon mental and moral powers. Tobacco, physiological effects of, influence upon youth.

SEVENTH MONTH.

Special senses. Touch, description, uses. Taste, uses of. Smell, structure of organ, uses. Hearing, structure of ear. Sight, structure of eye. Care of eyes and ears. Value of health. Disease, prevention of, cure of. Arrangement and care of sickroom.

EIGHTH MONTH.

What to do in emergencies; as, burns, cuts, wounds, nose bleed, sprains, cholera morbus, croup, fits, concussion of brain, choking, sun-stroke, drowning. Antidotes to poisons. Reviews.

BOTANY AND BOOKKEEPING.

Alternation.—It is believed that these two studies can be taken in one year, by taking botany two months in the fall, then bookkeeping four months in the winter, and resuming botany two months in the spring. This plan has been tried successfully in many schools.

FIRST MONTH.

Botany, definition, a pattern plant, seedlings, embryo, cotyledons, radicle, plumule. Buds, axillary, terminal, scaly, naked, accessory, arrangement. Roots, primary, secondary, fibrous, fleshy, conical, napiform, fusiform, aerial, epiphytes, parasites. Annuals, biennials, perennials, stems, herbs, shrubs, trees, climbing, twining, culm, caudex, sucker, stolon, offset, runner, tendrils, spines, subterranean stems, rhizoma, tuber, corm, bulb.

SECOND MONTH.

Leaves, blade, petiole, stipules, parenchyma, veins, epidermis, venation, parallel-veined, netted-veined, palmately-veined, radiate-veined. General forms of leaves, of apex, of base, outlines of margins, mode of lobing, compound leaves, unifoliate, bifoliate, trifoliate, perfoliate, equitant, phyllodia. Uses of leaves, storage of food, as bud scales for protection, as spines, for climbing, as pitchers, as traps. Stipules, phyllotaxy, alternate, opposite, whorled. Vernation.

THIRD MONTH.

Bookkeeping, cash accounts, account of boy at school, cash account in a small business. The balance of the cash account should show the amount on hand at any time. Personal accounts, debit and credit, simple accounts, with persons in ordinary business and trades.

FOURTH MONTH.

Personal accounts continued for practice and to fix correct ideas of what an account is. Find what the difference between the two sides of a personal account shows. Gain and loss accounts, accounts kept with a small business; as, a field of wheat, a field of corn, a farm, etc. Get an exact notion of the real meaning of an account of this kind.

FIFTH MONTH.

Continue gain and loss accounts. Compare the three kinds of accounts, and fix carefully the exact meaning of each and the results obtained from each. Financial statements and papers. Write notes, checks, receipts, drafts, and make out bills. Write up accounts and draw off statements of the condition of the business. Forms will be found in most text-books.

SIXTH MONTH.

Auxiliary books, day book, bill book, sales book, journal, and ledger. Double entry. Develop true idea of journalizing; of posting. Show exactly why each book is kept. Write up memoranda of business transacted in all books and deduce results. In text-book used, learn carefully statements of definitions and principles.

SEVENTH MONTH.

During the spring, analyze and mount twenty-five plants, following directions in Gray's School and Field Book of Botany.





Botany resumed. Flowers, inflorescence, peduncle, pedicel, rhachis, bract, raceme, corymb, umbel, spike, head, catkin. Floral envelopes, calyx, corolla, essential organs, stamens, pistils, plan of flower, flowers altered branches, parts of a flower altered leaves, modifications of type flower, perfect, imperfect, etc., by union of parts, by consolidation of parts, arrangement of parts in the bud. Arrangement and modifications of stamens, of anthers. Pollen, pistil, ovary, style, stigma, naked seeded, ovules, receptacle, fertilization, the fruit.

EIGHTH MONTH.

Anatomy of seeds, seed-coats, hilum, kernel, embryo, radicle, cotyledons, definition of growth, protoplasm, cells, cell-walls, cellular tissue. Wood and wood-cells, ducts, cell contents, chlorophyll, starch, crystals, analogy of. Roots and stems, endogenous, exogenous, bark, inner bark, green bark, corky layer, wood, sap-wood, heart-wood, the living parts of a tree. Anatomy of leaves, epidermis, stomata. Food of plants. Plant work and movement. Cryptogamous plants. Classification of plants.

SECOND YEAR.

TEXT-BOOKS.—General History, Algebra, Zoology, Physics.

GENERAL HISTORY.—Medieval and Modern Peoples.

ALGEBRA.—Begin with powers and roots and complete the text.

ZOOLOGY.—A general study of the animal kingdom.

PHYSICS.—A study of leading principles and topics.

GENERAL HISTORY.

NOTE.—In this year's work the geographical features of Europe and Asia should be thoroughly studied during the different epochs. In the breaking up of tribes and nations, the boundaries of governments and provinces change so often that one is soon bewildered and lost in a mass of names and details, unless great care is exercised in firmly locating important places and boundaries of countries. Study maps constantly.

FIRST MONTH.

The Middle Ages, period, divisions, a new era, Teutonic settlements, Byzantine Empire, Lombards, the papacy. German civilization, men, women, home, government, religion, arts and letters. The Saracens, Mohammed, Caliphs, invasion of Europe, Charles Martel and Charlemagne. The Franks, Clovis, Charlemagne crowned emperor. England, Roman conquest, Anglo-Saxon conquest, Danish and Norman conquests, Magna Charta. Conquest of Ireland, Wales, and Scotland. English civilization, government, ordeals, literature, home, dress, sports.

SECOND MONTH.

France, Norsemen, Carolingian Line, Capetian Line, House of Valois, Hundred-Years war, Crecy, Calais, the black death, Poitiers, King John, Black Prince, Agincourt, Joan of Arc, absolutism. French civilization, the Gauls. Germany, Saxon dynasty, the Magyars, the Holy Roman Empire, the Franconian dynasty, Hildebrand, Investiture, the Hohenstaufen Line, the peasants, the Feme, cities, the Hapsburg Line, Council of Constance, John Huss, House of Hohenzollern. Switzerland, Morgarten, Sempach.

THIRD MONTH.

Italy, Guelf and Ghibelline, power of the popes, Italian cities, Florence, Venice, Pisa, Genoa, the Medici. The crusades, origin, first crusade, Godfrey, Saladin and Richard, capture of Constantinople, the last of the crusades, Saint Louis, effects of crusades. The Moors in Spain. Asia, Mongols, Genghis Khan, Tamerlane, the Turks, capture of Constantinople by the Turks. Medieval civilization, feudalism, ceremonies, the castle, chivalry, the knight, arms and armor, education and literature, the guilds, dress and food.

FOURTH MONTH.

The Modern Era, causes of change, crusades, gunpowder, printing, maritime discoveries, Columbus, Mexico, Peru. The French in Italy, Charles V, Francis I, Henry VIII, the field of the cloth of gold, Pavia, sack of Rome. The reformation, Luther, diet at Worms, Wartburg, Smalcaldic League and war, Treaty of Passau, abdication of Charles, the Dutch Republic, Alva, William of Orange, Forty-Years war, results. France, religious wars, Vaudois, Catharine de Medici, Coligny, Guises, Massacre of St. Bartholomew, Henry of Navarre, Edict of Nantes, Sully.

FIFTH MONTH.

England, the Tudors, Henry VIII, Wolsey, Catherine, Anne Boleyn, the Reformation, church reform, Mary, Elizabeth, Mary Queen of Scots, the Armada, Essex. Progress of civilization, commerce, art, literature, Roger Ascham, Shakespeare, Bacon, Spenser, Johnson, science, home life in England, mansions, furniture, dress, food. German life, the rich, traveling student, The Thirty-Years war, causes, beginning, Gustavus Adolphus, Tilly, Wallenstein, Lutzen, Peace of Westphalia. Richelieu, Louis XIV, Mazarine, Colbert, persecution of the Huguenots, war with Flanders, war with Holland, war of the Spanish Succession.

SIXTH MONTH.

England, the Stuarts, James I, Gunpowder Plot, Charles I, Parliament and the King, ship money, John Hampden, Laud, Long Parliament, Civil war, Marston Moor, Naseby, execution of Charles, the commonwealth, Dunbar, Worcester, the Protectorate, the Friends, Fox, Penn, Richard Cromwell, the Restoration, the Plague, the Great Fire, plots, Titus Oates, James II, Revolution of 1688, William III, Anne. Civilization, literature, philosophy, science, art, Louis XIV, court etiquette, palace at Versailles, the court. Russia, Peter the Great, Charles XII.

SEVENTH MONTH.

Rise of Prussia, Frederick William, Frederick the Great, Maria Theresa, Seven-Years war, result. England, House of Hanover, George I, Walpole, Pitt, Wesley, George III. French Revolution, condition of the people of France, abolition of the monarchy, the Bastille, reforms, execution of Louis XVI and Marie Antoinette, the Reign of Terror, the Jacobins, Marat, Charlotte Corday, Robespierre, the reaction, the Directory, Napoleon, the day of the Sections, Italian campaign, Lodi, Arcole, Expedition to Egypt, the republic, three consuls. Literature in England, invention.





EIGHTH MONTH.

France, Austrian war, Napoleon emperor, Josephine, Austerlitz, Trafalgar, war with Prussia, war with Russia, war with Spain and Portugal, abdication of Napoleon, Elba, Louis XVIII, Napoleon's return, Waterloo, Wellington, second abdication, St. Helena, second restoration of Louis XVIII, Charles X, House of Orleans, Revolution of 1848, second republic, second empire, Sedan, Paris, third republic. England. Germany, Bismarck, German Union. Italy, Garibaldi, Victor Emanuel, Italy united. Turkey, Greece, Netherlands, Japan.

ALGEBRA.

FIRST MONTH.

Powers and roots. Involution, of a monomial, of a binomial. The binomial theorem; study this until pupils are able to expand a binomial readily. Involution of polynomials, evolution. Root, degree of a root, radical sign, index, the double sign \pm , an even root of a positive quantity, odd root of a quantity, even root of a negative. Extraction of roots, of a monomial, square root of a polynomial, of a numerical quantity.

SECOND MONTH.

Extraction of cube root, of polynomials, of numerical quantities, higher roots. Quadratic equations, pure or incomplete, form of, roots, solution, affected quadratics, equation or complete quadratic equation, form of, all may be reduced to four, solution of numerical affected quadratics, of literal. Equations of the quadratic form.

THIRD MONTH.

Formation of equations when the roots are given. Solve many problems of one unknown quantity, of two unknown quantities. Special cases, one equation of the second degree and one of the first, by squaring members of one equation, by division, by removing a common factor, by substituting value of one letter in the other. Interpretation of negative results.

FOURTH MONTH.

Exponents, radicals, and inequalities, fractional and negative exponents, multiplying or dividing both terms of fractional exponents, how negative exponents may arise, value of a quantity affected with a negative exponent, transferring a factor from either term of a fraction, clearing expressions of negative exponents; expressing fractions in integral forms; raising quantities to powers by changing the exponents; extraction of roots by changing the exponents; multiplying and dividing quantities by operations upon the exponents. Radicals, definitions, reductions, addition, subtraction, multiplication, and division of radicals.

FIFTH MONTH.

Involution of radicals, evolution, rationalization, to rationalize the denominator. Imaginary quantity, reduction of, square root of binomial surds. Solve many examples of all forms. Radical equations, character of roots, real or imaginary. Give much practice in determining the character of roots. Inequalities, symbol of, how read, members, same sense, contrary sense. Review radicals.

SIXTH MONTH.

Ratio, definition, terms, expression of the value of the ratio, of the antecedent, of the consequent, effect of multiplying or dividing either or both terms, compound ratios. Proportion, definition, simple and compound, couplet, mean proportional, propositions, the product of extremes, product of two quantities equal to the product of two other quantities, alternation, inversion, composition, division, by composition and division, two propositions having a couplet in each equal, antecedents alike, consequents alike, equimultiples of two quantities, equal parts, like powers, like roots, products and quotients of like terms, mean proportional, limiting ratios, infinites, finite constants, infinitesimals, discussion of variables.

SEVENTH MONTH.

Progressions, arithmetical series, terms, common difference, ascending series, descending, formulæ, for last term, for the sum, examples, geometrical series, definitions, formulæ, for last term, for sum, examples, infinite series, convergent, divergent, limit of a convergent series, examples involving infinite series; as, circulating decimals.

EIGHTH MONTH.

Review. Learn definitions, solutions, rules, and principles thoroughly. Mathematical studies must be committed to memory as well as understood. Do not fail to learn and remember.

ZOOLOGY.

FIRST MONTH.

Nature.—Kingdoms, dead matter, living matter, composition of living bodies, minerals and organized bodies compared, structure, size, and shape, phenomena, one at rest and increase by external additions, the other grow from within, reproduce their kind, and die. Plants and animals distinguished, as to origin, composition, forms, structure and physiology. Relation between minerals, plants, and animals. Life, protoplasm, manifestations of life, cause of organization, cells, nucleus, nucleoli. Tissues, epithelial, connective, cartilaginous, osseous, dental, adipose, muscular, nervous. Organs and their functions, phenomena of life, nutrition, motion, sensation, definition of nutrition, operations of nutrition. Definition of food, organic and inorganic, tissue forming.

SECOND MONTH.

How Animals Eat.—Prehension of food, liquid food, compare many examples, solids, the amoeba, polyps, jelly-fishes, snails, earth-worms, beetles. Methods of prehension among vertebrates. Mouths of animals, amoeba, polyps, parasitic worms, lobster, butterfly, bees, mosquito, fly, birds, mammals. The teeth of animals, vertebrates, fishes, mollusks, serpents, poison. Deglutition, lowest forms, in serpents. The alimentary canal, digestion, of the amoeba, hydra, mollusks, fishes, birds, quadrupeds, ruminants, man.

THIRD MONTH.

Digestion, Circulation, and Respiration.—Object of, dissolved, changed in composition, chemical preparation, how produced, secretions,

The first of these was the discovery of gold in California in 1848. This discovery led to a great influx of people to California, and the state became a great center of population. The second was the discovery of gold in Colorado in 1859. This discovery led to a great influx of people to Colorado, and the state became a great center of population. The third was the discovery of gold in Nevada in 1859. This discovery led to a great influx of people to Nevada, and the state became a great center of population.

The fourth was the discovery of gold in Idaho in 1860. This discovery led to a great influx of people to Idaho, and the state became a great center of population. The fifth was the discovery of gold in Montana in 1862. This discovery led to a great influx of people to Montana, and the state became a great center of population. The sixth was the discovery of gold in Wyoming in 1869. This discovery led to a great influx of people to Wyoming, and the state became a great center of population.

The seventh was the discovery of gold in Utah in 1871. This discovery led to a great influx of people to Utah, and the state became a great center of population. The eighth was the discovery of gold in Arizona in 1876. This discovery led to a great influx of people to Arizona, and the state became a great center of population. The ninth was the discovery of gold in New Mexico in 1878. This discovery led to a great influx of people to New Mexico, and the state became a great center of population. The tenth was the discovery of gold in Texas in 1880. This discovery led to a great influx of people to Texas, and the state became a great center of population.

The eleventh was the discovery of gold in Oklahoma in 1889. This discovery led to a great influx of people to Oklahoma, and the state became a great center of population. The twelfth was the discovery of gold in Kansas in 1890. This discovery led to a great influx of people to Kansas, and the state became a great center of population. The thirteenth was the discovery of gold in Nebraska in 1891. This discovery led to a great influx of people to Nebraska, and the state became a great center of population.

The fourteenth was the discovery of gold in Iowa in 1892. This discovery led to a great influx of people to Iowa, and the state became a great center of population. The fifteenth was the discovery of gold in Missouri in 1893. This discovery led to a great influx of people to Missouri, and the state became a great center of population. The sixteenth was the discovery of gold in Illinois in 1894. This discovery led to a great influx of people to Illinois, and the state became a great center of population.

The seventeenth was the discovery of gold in Indiana in 1895. This discovery led to a great influx of people to Indiana, and the state became a great center of population. The eighteenth was the discovery of gold in Ohio in 1896. This discovery led to a great influx of people to Ohio, and the state became a great center of population. The nineteenth was the discovery of gold in Pennsylvania in 1897. This discovery led to a great influx of people to Pennsylvania, and the state became a great center of population.



chyme, chyle, digestion in man. Absorption, how performed in lowest forms, in insects, vertebrates, by capillaries, lacteals, thoracic duct. Blood, of invertebrates, colors, vertebrates, composition of blood; blood corpuscles, size, shape, and color, functions of the blood, circulation of the blood, vessels, structure of arteries, veins, capillaries, two sets of capillaries, circulation in lowest forms, in insects. Differences in structure of heart in animals, cold-blooded, warm-blooded, cause of blood currents. Respiration, objects, air breathers, water-breathers, gills, tubes, lungs. What animals breathe by the skin? How do insects breathe? Vertebrates? Secretion and excretion. How performed in lowest form of animals? Simplest form of secreting organ, follicles, glands, salivary, liver, pancreas, gastric follicles. Excreting organs, the lungs, the kidneys, and the skin.

FOURTH MONTH.

The Skin, Bones, and Muscles.—Skin defined, animals without a skin, polyps, worms, mammals, shedding of skin and its appendages. The exoskeleton, endoskeleton, of the sponge, the crab, of insects, of fishes, of snakes. Hair, feathers. Bones, differences in bones, the skeleton of the lowest vertebrate, a typical vertebra. The skull of man, names of bones, how joined. How animals move, contractility, pseudopodia, cilia, muscular tissue. How a muscle contracts, white muscle, red, striated, extensors, flexors. Locomotion of animals, in water, in air, on solids.

FIFTH MONTH.

Nervous Matter.—Cells, fibers, tubes, ganglia, nerves, sensory, motor, arrangement of ganglia in lower animals, in vertebrates, the brain and spinal cord, functions of the brain, cerebrum, cerebellum, medulla, functions of the spinal cord. The sympathetic system. The senses, sensation, touch, where most acute. Taste, not always developed, animals possessing it. Smell, in what animals developed most? Why? Hearing, simplest form of the organ, where located, parts of the ear in man, the essential part of the organ of hearing. Sight, forms of the eye, compound eyes, ocelli, the eye of man. Instinct, intelligence, definition of each, evidences of intelligence in animals, voices of animals, vocal apparatus of birds, of man.

SIXTH MONTH.

Classification of Animals.—Classification not easily made, plans of structure, Protozoa, Spongidae, as examples. Species, genus, family, order, class, sub-kingdom. Classification a process of comparison. Protozoa and divisions, Metozoa and divisions, Sponges, Hydrozoa, Anthozoa, soft-bodied polyps, coral polyps, star-fishes, Vermes, tape-worm, trichina, marine worms, Mollusks, Gasteropods, Pteropods, Pulmonates.

SEVENTH MONTH.

Cephalopods, Arthropods, Crustacea, Arachnids, Myriapods, Insecta, Neuroptera, Orthoptera, Hemiptera, Coleoptera, Diptera, Lepidoptera, Hymenoptera, Tunicates, Vertebrates, Acrania, Craniota, Fishes, Amphibia, Reptiles.

EIGHTH MONTH.

Aves, classes and sub-classes. Mammalia. Review.

PHYSICS.**FIRST MONTH.**

Matter, definition, divisions, atoms, molecules, masses. Attraction, forms of, gravitation, cohesion, adhesion, chemical affinity. Motion, forms of, physical change, definition of physics, physical properties, divisions, impenetrability, weight, inertia, etc., characteristic properties. Conditions of matter, solid, liquid, æriform. Motion, force, dynamics, momentum, laws of motion, action, reaction, reflected motion, law, angles. Gravitation, laws, gravity, weight, laws, center of gravity, equilibrium, line of direction.

SECOND MONTH.

Falling bodies, velocity, laws, initial velocity, increment of gravity, formulas. The pendulum, laws, uses. Energy, work, elements of work, measure, unit of work, horse power, kinetic energy, potential energy. Machinery, principles, a machine, uses, laws. Levers, classes, laws, balance, true and false, compound lever. Wheel and axle, law, forms, connecting wheels, uses, velocities. Pulley, fixed, movable, law. Inclined plane, wedge. Screw, definition, law, uses. Friction a transformer of energy.

THIRD MONTH.

Liquids, pressure, transmission of, Pascal's principle, Pascal's experiment, hydrostatic bellows, press, pressure due to gravity, downward pressure, rule, upward pressure, lateral pressure, equilibrium of liquids, Archimedes' principle, floating bodies, specific gravity, standard, flow of liquids, of rivers. Water power, turbine wheel, overshot, breast, undershot wheel. Pneumatics, tension of gases, weight of air, pressure, Torricelli's experiment, measure of air pressure, air pump, a condenser, lifting pump, force pump, siphon.

FOURTH MONTH.

Electricity and magnetism, electric attraction, repulsion, electrifying by friction, conduction. Galvanic electricity. Magnets, temporary, permanent, compass, nature of electricity, manifestations, two kinds—positive and negative, law, electroscopes, conductors, tension, potential, electromotive force, unit a volt, unit of resistance, charging by contact, induction, polarization, theory of electricity, the electrophorous, charge on the surface, density at points, machines. Leyden jar, construction, charging, discharging. Lightning and lightning rods.

FIFTH MONTH.

Voltaic electricity, currents, voltaic current, direction, unit of current the ampere, unit of quantity, voltaic cells, Smee's cell, Daniell's cell, etc. A voltaic battery, arrangement of cells, thermal effects of current, luminous, physiological effects, chemical, magnetic, the telegraph, galvanometer. Thermo-electricity, magnets, natural, artificial, poles, attraction, laws, magnetic field, magnetizing by contact, induction, earth a magnet, the needle, dip, declination, electro-magnets.

SIXTH MONTH.

Induced currents, circuit, effects of closing or breaking a circuit, extra current, Ruhmkorff's coil, armature, dynamo-electric machines, electric





lamps, incandescent, the brush lamp. Telephonic current, circuit. Sound, definition, undulations, cause, propagation, wave length, sound waves, media, velocity, noise and music, tubes, reflection, the telephone, action, transmitter, sympathetic vibration of cords, sounding boards, re-enforcement of sound, interference, tones, fundamental, overtones. Heat, produced, temperature, thermometer. Expansion by heat, solids, water, gases, absolute zero.

SEVENTH MONTH.

Liquefaction and vaporization, fusion, laws, evaporation, ebullition, laws, distillation, latent heat, of fusion, of solution, solidification, of vaporization, condensation, of gases. Latent heat of water, of steam. Specific heat, definition, of water, conduction, convection, radiation, refraction of heat, reflection. Thermo-dynamics, heat from percussion, chemical action. The steam engine, condensing engines, non-condensing. Light, luminous bodies, transparent, translucent, opaque bodies, rays, beams, motion of light, inverted images, velocity, intensity.

EIGHTH MONTH.

Reflection of light, law, diffused light. Mirrors, plane, concave, convex, focus, images, real, virtual. Refraction of light, laws, refractors, plates, prisms, lenses, center of curvature, optical center, axis, principal focus, conjugate foci, magnified images, solar spectrum, dispersion, white light. Color, the rainbow, camera, the eye, microscope, telescope, magic lantern, stereoscope. Conservation of energy, correlation of energy. Review.

HIGH SCHOOL COURSES.

A few years ago an effort was made by the high school and college men of the State to arrange a course of study that should reach from the primary department to the university. To that end these sections of the State Teachers' Association appointed committees consisting of representative college and public school men to arrange and report such a course. There was considerable difference of opinion at first and a compromise course was reported. The committees were continued for several years and made annual reports, each of which was more acceptable to the Association than the preceding one. The courses here presented show substantially the consensus of opinion of the committees and were arranged from their last report.

In connection with the two years' higher course prepared by Dr. Richard Edwards, there are now two standard High School Courses, one of three years and one of four years. A pupil on completing the first two years of the standard Course is prepared to enter the third year class of any high school using the standard Course, provided he has completed the special requirements of the first two years' work in the high school which he enters.

It is hoped that the general adoption of the standard Course may lead to more thorough and systematic work in our high schools and that a high school diploma stating the work accomplished by the graduate will mean much more than it now does.

THREE YEARS' COURSES.

LATIN COURSE.

FIRST YEAR.	SECOND YEAR.	THIRD YEAR.
Algebra I.	Algebra II. } $\frac{1}{2}$ Year. Geometry. }	Geometry.
English Classics.	Latin I.	Physical Geography.
Ancient History.	Zoology.	Latin II.
Physiology.	Physics.	English.
Botany and	Mediæval and	Reviews.
Bookkeeping.	Modern History.	

ENGLISH COURSE.

FIRST YEAR.	SECOND YEAR.	THIRD YEAR.
Algebra I.	Algebra II. } $\frac{1}{2}$ Year. Geometry. }	Geometry.
English Classics.	Rhetoric.	Physical Geography.
Ancient History.	Zoology.	Literature.
Physiology.	Physics.	English.
Botany and	Mediæval and	Reviews.
Bookkeeping.	Modern History.	

SUGGESTED ALTERNATIONS.

Classics, English and Reviews.
 Ancient History, Mediæval and Modern History.
 Botany and Bookkeeping, Zoology.
 Physical Geography, Physics.
 Physiology, { Latin II.
 { Literature.
 Classes every year in Algebra I, Latin I.





FOUR YEARS' COURSES.**FIRST YEAR.**

ENGLISH COURSE.	CLASSICAL COURSE.	GERMAN COURSE.
English.	Latin.	German.
Algebra.	Algebra.	Algebra.
{ Civil Government. Bookkeeping.	{ Civil Government. Bookkeeping.	{ Civil Government. Bookkeeping.
.....

SECOND YEAR.

ENGLISH COURSE.	CLASSICAL COURSE.	GERMAN COURSE.
English.	Latin.	German.
Geometry.	Geometry.	Geometry.
Biology.	Biology.	Biology.
General History.	General History.	General History.

THIRD YEAR.

ENGLISH COURSE.	CLASSICAL COURSE.	GERMAN COURSE.
English.	Latin.	German.
Physics.	Physics.	Physics.
{ General History. Physiography.	{ General History. Physiography.	{ General History (or English History). Physiography.
.....	Greek or German.

FOURTH YEAR.

ENGLISH COURSE.	CLASSICAL COURSE.	GERMAN COURSE.
English.	Latin.	German.
Political Economy.	Greek or German.	Political Economy.
{ Astronomy. Mental Science.	{ Astronomy. Mental Science.	{ Astronomy. Mental Science.
.....

NOTE.—Studies in braces, one half year each.

SUGGESTIONS ON THE FOUR YEARS' COURSES.

1. Alternations:—English of first year, English of second year; English of third year, English of fourth year; Physics of third year with Astronomy and Mental Science of fourth year.

This will require 21 classes per day, if Greek is omitted, or 23 per day, if Greek is taught.

2. Local influences may demand subjects not mentioned. The dashes indicate where these may be placed.

3. Should the arrangement of subjects not adjust itself to the teaching force, some subjects may be shifted to such places as will accommodate the conditions. This is done to give elasticity to the Course.

4. Music, Drawing, Geology, and Chemistry are suggested when practicable. Mythology can be taught with the Latin.

5. A half year to Botany and the same to Zoology seems insufficient. A thoughtful adjustment of work may increase the time for these by two or more months.

6. Careful attention should be given to the forms of expression in English in *all* classes; this applies both to oral and written work.

7. It might be well for each school to select a list of ten or more books, and require each pupil to read a definite number of these each year. An examination could be given on this reading and the school records show that it had been done in a satisfactory manner.

BOOKS FOR SCHOOL LIBRARIES.

Importance of the Library.—This is a work that should interest both parent and teacher. Parents should be as anxious to have their children read good books as to have them keep good company, for, aside from home influences, these are the two factors that do the most to mold the character and shape the fortunes of the child. The teacher who does not get beyond the confines of his text-book cannot hope to interest his class very long, or lead them effectually to help themselves. The constant reader of good books is always in good company, and is thus fortified against the majority of temptations that beset him through life.

No system of education is complete that is satisfied with the knowledge that is derived from the text-book merely, and no school is complete that has no library; the public library is the complement of the public school.

Their Cost.—In these days of cheap printing it is easy to secure a library for every district. The law gives directors the power to expend public funds for this purpose and expects them to do it. But if this is not found expedient, the young people, aided by the teacher, by means of literary entertainments and socials, can raise the funds.





Quite a number of excellent books for the school library have been suggested in other parts of this Course, under the head of Supplementary Reading for the different grades, (pages 13, 18, 24, 34, 44, 53, 64, and 84), under Geographical Readers, (page 52), and Historical Reading, (page 61), and the Pupils' Reading Circle, (page 147).

The books listed below were selected by Mrs. McMurry, Misses Valentine, Stanley, and Milner, with suggestions from Profs. Van Liew, Galbreath, Colton, Brown, and Melville, all of the Ill. State Normal University.

BOOKS FOR SCHOOL LIBRARIES.—Especially Books to Interest Children in Reading.

PRIMARY GRADES.

STORY BOOKS.

Æsop's Fables, Vols. I and II, Educational Pub. Co., each,	\$.30
Andersen's Fairy Tales, Wiltse, Ginn & Co.	.35
Andrews' Seven Little Sisters, Ginn & Co.	.50
Andrews' Each and All, Ginn & Co.	.50
Andrews' Stories Mother Nature Told Her Children, Ginn & Co.	.50
Burnett, Little Lord Fauntleroy, Scribner.	2.00
Carroll, Alice's Adventures in Wonderland. Crowell's Children's Favorite Classics. 16mo edition.	.75
Easy Steps for Little Feet, American Book Co.	.25
Eggleston, Stories of Great Americans for Little Americans, American Book Co.	.45
Grimm's Fairy Tales, Wiltse, Ginn & Co.	.35
Harris, Little Mr. Thimblefinger, The Century Co.	2.00
Harris, Mr. Rabbit at Home, The Century Co.	2.00
Hofer's Child's Christ Tales, Woman's Temple, Chicago.	.75
Howlston, Cat Tails and Other Tales, Kindergarten Literature Co.	.55
Jackson, H. H., Letters from a Cat, Roberts Bros.	1.25
Kipling, Rudyard, The Jungle Book, The Century Co.	1.50
Kipling, Rudyard, Second Jungle Book, The Century Co.	1.50
McMurry, Classic Stories for Little Ones, Public School Publishing Co.	.40
Miller, E. H., What Tommy Did, Wm. S. Allison Co.	.50
Phelps, E. S., The Trotty Book, Houghton, Mifflin & Co.	1.25
Scudder, Fables and Folk Stories, Houghton, Mifflin & Co.	.40
Scudder, Seven Little People, Houghton, Mifflin & Co.	.60
Sewell, A., Black Beauty, Lothrop.	1.00
Stowe, Harriet Beecher, Queer Little People, Houghton, Mifflin & Co.	.75
White, E. O., When Molly Was Six, Houghton, Mifflin & Co.	1.00
Werner's "Little Folks Library," Werner Educational Co., 6 Vols.	.50

POETRY.

Bellamy & Goodwin, Open Sesame I, Ginn & Co.	.75
Cox, Palmer, The Brownies, Their Book, The Century Co.	1.50
Dodge, Mary Mapes, Rhymes and Jingles, Scribner.	1.50
Field, Eugene, Love Songs of Childhood, Scribner.	1.00
Field, Eugene, With Trumpet and Drum, Scribner.	1.00
Heart of Oak, I, D. C. Heath & Co.	.25
Kriege, Rhymes and Tales for the Kindergarten and Nursery, E. Steiger & Co.	1.00
Scudder, Verse and Prose for Beginners, Houghton, Mifflin & Co.	.25
Stevenson, Robert Louis, A Child's Garden of Verses, Scribner.	1.00

BOOKS TO BE READ TO CHILDREN.

Poulssen's In the Child's World, Milton Bradley Co.	1.50
Putnam, M. L., Children's Life of Abraham Lincoln, illustrated, McClurg.	1.25
Scudder, H. E., George Washington, Riverside School Library Series, H. M. & Co.	.60
Wiggin, K. D., Story Hour, Houghton, Mifflin & Co.	1.00
Wiltse's "Stories for Kindergartens and Primary Schools," Ginn & Co.	.35

INTERMEDIATE GRADES.

BIOGRAPHY AND HISTORY.

Abbott, J. S. C., LaSalle, Dodd & Mead.	1.25
Abbott, J. S. C., Daniel Boone, Dodd & Mead.	1.25
Abbott, J. S. C., De Soto, Dodd & Mead.	1.25
Coffin, C. C., Boys of '61, Harper Bros.	3.00
Coffin, C. C., Boys of '76, Harper Bros.	3.00
Coffin, C. C., Old Times in the Colonies, Harper Bros.	3.00
Drake, S. A., Making of the Ohio Valley States, Harper Bros.	1.50
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TABLE OF CONTENTS.

Historical.....	3	Arithmetic—Fifth Year.....	48
Preface.....	4	Sixth Year.....	59
Introduction.....	5	Seventh Year.....	71
The Plan.....	5	Eighth Year.....	91
The School Library.....	6	Writing—First Year.....	18
Individuality of the Teacher.....	6	Second and Third Years.....	22
Alternation of Work.....	6	Fourth, Fifth, and Sixth Years.....	56
Counties with Short Terms of School.....	7	Seventh and Eighth Years.....	73
Examinations or Written Reviews.....	8	Physiology—First Year.....	18
Monthly, Central, and Final Examinations.....	9	Second Year.....	24
Directions for Examinations.....	10	Third and Fourth Years.....	32
Records.....	11	Fifth and Sixth Years.....	49
Patrons' Day.....	11	Seventh Year.....	83
Outline of the Course.....	12	Geography (Oral)—Fourth Year.....	41
Reading—First Year.....	13	Fifth Year.....	50
Second Year.....	19	Seventh Year.....	74
Third Year.....	24	Eighth Year.....	92
Fourth Year.....	34	United States History — Sixth Year.....	61
Fifth Year.....	43	Seventh Year.....	79
Sixth Year.....	53	Eighth Year.....	97
Seventh Year.....	64	Civics or Good Citizenship.....	101
Eighth Year.....	84	General Exercises—Vocal Music.....	104
Spelling—First Year.....	15	Drawing—First Year.....	110
Second Year.....	20	Drawing—Second Year.....	114
Third and Fourth Years.....	25	Lessons in Morals and Manners.....	117
Fifth Year.....	44	Observation Work—Zoology.....	120
Sixth Year.....	53	Botany.....	122
Orthography—Seventh Year.....	64	Physics.....	124
Eighth Year.....	84	Higher Course of Study.....	126
Language—First Year.....	15	General History—First Year.....	126
Second Year.....	20	General History—Second Year.....	131
Third Year.....	25	Algebra—First Year.....	127
Fourth Year.....	34	Algebra—Second Year.....	133
Grammar—Fifth Year.....	47	Physiology.....	129
Sixth Year.....	55	Botany and Bookkeeping.....	130
Grammar and Composition—Seventh Year.....	67	Zoology.....	134
Eighth Year.....	87	Physics.....	136
Number—First Year.....	15	High School Courses.....	137
Second Year.....	20	Three Years' Courses.....	138
Arithmetic—Third Year.....	30	Four Years' Courses.....	139
Fourth Year.....	39	Books for School Libraries.....	140
		Illinois Teachers' Reading Circle.....	145
		Illinois Pupils' Reading Circle.....	147
		Outline Map of Illinois.....	Cover









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